mental health digest

Vol. 5, No. 6, June 1973

1 **Prosocial Behavior**

2 **Learning Concern for Others**
by Marian Radke Yarrow, Phyllis M. Scott, and Carolyn Zahn Waxler

12 **Learning Theory and Prosocial Behavior**
by D. L. Rosenhan

16 **Moral Conduct and Moral Character: A Psychological Perspective**
by Robert Hogan

25 **The Hierarchical Nature of Moral Judgment: A Study of Patterns of Comprehension and Preference of Moral Stages**
by James R. Rest

31 **A Legal Look at Prosocial Behavior: What Can Happen for Failing to Help or Trying to Help Someone**
by John Kaplan

34 **Competence and Helping**
by Mary B. Harris and Lily C. Huang

36 **Organization of Early Skilled Action**
by Jerome S. Bruner

41 **High School Students as Mental Health Aides in the Elementary School Setting**
by Spencer A. McWilliams and Norman J. Finkel

44 **Clients', Therapists', and Judges' Evaluations of Psychotherapy**
by David Horenstein, B. Kent Houston, and David S. Holmes

47 **Reactions of Samoan Burn Patients and Families to Severe Burns**
by Joan Ablon

54 **Sex Differences in Perceptual Differentiation and Stimulus Intensity Control**
by Julian Silverman, Monte Buchsbaum, and Helm Stierlin

59 **Niacin in the Long-Term Treatment of Schizophrenia**
by J. Richard Wittenborn, Emile S. P. Weber, and Mary Brown

The *Mental Health Digest* is a monthly publication designed to reflect the whole spectrum of mental health and to present a broad sampling of scientific subject matter and professional points of view. It contains condensations of material selected from the current mental health literature. The condensations are published with the approval of the authors and publishers for use in the *Mental Health Digest* only. Readers interested in particular digests are urged to consult the journal or other source in which the material first appeared or to ask the authors for reprints.

Material contained in the *Digest* does not necessarily reflect the opinions, official policy, or position of the National Institute of Mental Health.

Editorial Advisory Board

Bertram S. Brown, M.D., Chairman

William E. Bunney, M.D.
Harry P. Cain II, Ph.D.
Morris E. Chafetz, M.D.
Robert A. Cohen, M.D., Ph.D.
John C. Eberhart, Ph.D.
James A. Goodman, Ph.D.
James D. Isbister
Thomas F. A. Plaut, Ph.D.
Luther D. Robinson, M.D.
Gian C. Salmoiraghi, M.D., Ph.D.
Claudewell S. Thomas, M.D.
Francis N. Waldrop, M.D.
Louis A. Wienckowski, Ph.D.

Editor: Lorraine Bouthilet, Ph.D.

to subscribe

The *Mental Health Digest* is available on subscription from the Superintendent of Documents, Government Printing Office, Washington, D.C. 20402. Subscription price: $6.50 a year; Single copy: 55¢. For foreign mailing, add $1.75. (No additional postage is required for Canada, Mexico, and Central and South American countries except Argentina, Brazil, British Honduras, French Guiana, Guyana, and Surinam.) Please make check or money order payable to the Superintendent of Documents. An annual subscription runs for 12 consecutive issues and begins when orders are processed. However, a subscription may be backdated to include issues already published in the current volume when the issues are available. Issues for back years, when available, are sold at the single copy price. The expiration date is printed on the top line of the address label. Change of address and complaints about nonreceipt of issues should be sent to the Superintendent of Documents, and should include the old address, preferably a mailing label, as well as the new address.

Use of funds for printing this publication approved by the Director of the Bureau of the Budget, May 20, 1968.

Prosocial Behavior

Evaluation

By how many millimeters is Johnny
more or less merciful today
than yesterday?

By what calipers his compassion
ascertained?

Can litmus tell if he has wit;
determine his judgment,
good or bad?

How measure you his morality—
going up or going down?

What scale can tell how honest
(or dishonest) is the lad?

Do "fools rush in where
angels fear to tread;"
"much learning doth make
thee mad?"

—Georgina Haddenhorst
Laramie, Wyoming

(Reprinted with permission of the author and *ETC: A Review of General Semantics.* Copyright 1973 by the International Society for General Semantics.)

* * * *

This issue of the *Digest* features several condensations of articles on prosocial behavior.

Printed 1973

Learning Concern for Others

Marian Radke Yarrow, Phyllis M. Scott, and Carolyn Zahn Waxler

Young children's potentialities for altruistic behavior are quite unknown. Aggression, anxiety, guilt, and self-centered motives and behavior have been so much the cloth of theory and research that questions of a "softer" side of young human beings seem almost unscientific. To complement the developmental research that has pressed toward an understanding of children's intentions to hurt or injure, there is need for study of children's intentions to be kind.

Altruism is not uncommon. It exists in institutionalized forms, such as charities, volunteer services, and rescue missions, and in many individual acts of altruism. Although society values altruism, this valuation is not pure sanction. Being helpful or generous is an ideal according to the codes of humanitarianism. However, such behavior is frequently suspect and regarded as manipulative. Further, while being independent and able to "overcome" by one's own efforts are highly valued, accepting help may be seen as weakness, and offering help, as intrusion. Fine discriminations are required to discern the appropriateness of minding one's own business and letting others mind theirs, or of being one's brother's keeper.

The learning task of a child is difficult. He experiences contradictorily practiced and valued acts of altrusim, and his own acts of kindness are elicited under diverse circumstances—out of fear, obligation, expectations of reward, wanting to be like the adult, or concern for the person in need. But it seems likely that different kinds of rearing emphasize different altruistic behavior; children are variously aware of the bases of their behavior and interpret the altruism of others differently. Complexities in socialization are apparent, not only for the child, but for the persons and institutions responsible for rearing.

In the best of societies, one would hope that the genuine kind of altruism would be high in the hierarchy of values. Our research endeavor is to study this behavior in the early years of childhood and to examine the conditions that lead to its development.

A considerable source of confusion for research on altruism resides in the concept. Altruism is not a specific form of behavior. It includes a diversity of responses—helping, sharing, defending, rescuing, sympathizing, and more. As psychological theorists have dealt with these behaviors, they have emphasized different underlying processes. In psychoanalytic theory, it is assumed that guilts and anxieties which the individual is seeking to control are the substructure of his altruism. In social learning theories, "identification" processes have been emphasized. In other learning approaches, it is assumed that acts of helping and sharing, like other responses, are acquired as the result of reinforcements.

Conceptually, the kinds of altrusim to which theories are addressed range in meaning and motivation from benevolence to calculated self-benefit. In the study, our focus is on the development of behaviors defined as unselfish, based on the reward of having contributed to the well-being of the other.

The Study

Explicit in the design is the assumption that rearing conditions influence the child's regard for others and his care of others. Child rearing is many

things simultaneously. For the young child, the parent is a caretaker—a model, controller, disciplinarian, source of nurturance, teacher, and figure who is loved, hated, feared, and envied. The parent is never one of these alone. The child learns from observing the parent, from being taught directly, from being rewarded and punished, and from experiencing varying care and regard from the parent.

Research on rearing influences bears witness to the difficulties in dealing with these many "layers" of rearing and, at the same time, to the limitations of isolating one aspect of socialization from the whole. For a research strategy, we chose to cast our lot with the first kind of difficulty: The experimental conditions were varied in a number of rearing dimensions.

If one examines natural socialization, one finds that parents who are concerned about the welfare of others proceed in varous ways toward the socialization of their children. Parents may model *principles* of altruism (what one should do and is expected to do) more than the *practices*. Or parents may *teach* principles and *exemplify* them in living. Parents who proceed in either of these ways vary in the warmth and nurturance of their relationships with their children. The conditions in our experiment were varied to represent these differences in rearing.

Nurturance encompasses a wide range of behaviors: providing, helping, comforting, giving attention, showing affection. Nonnurturance is more than the absence of nurturance; it is indifference, lack of attention and care, punitiveness. Both nurturance and nonnurturance are manifested by the parent contingently as well as noncontingently.

The processes by which nurturance and nonnurturance influence the child's learning are not well understood. In identification theory, the child's wanting to keep the mother available and rewarding, but being unable to have the mother fully, are assumed to lead to his substituting the mother's behavior for the mother herself. The nurturance of the parent model has, perhaps, special relevance for the child's acquisition of altruistic responses when one considers that parental nurturance is itself an example or model of altruism. Further, since nurturance provides the child with information about himself—that he is well-regarded, valued, and secure—he may need less to see his social environment in self-oriented terms, and he feels freer to act kindly toward others. Through a number of processes, nurturance may be expected to facilitate the child's learning.

Predictions regarding the effects of a nonnurturant relationship are less consistent. While "identification with the aggressor" may also lead to the child's adoption of the adult's behaviors, the adult's modeling of nonaltruism in his nonurturant interactions with the child, along with his manifestations of altruism in his interactions with others, provide conflicting influences. Further, the adult nonnurturance gives the child information about himself—that he is not valued or loved—which may affect his perception of others and interfere with his feeling free to act nurturantly toward them. One should expect, in our study, that the experimenter's nonnurturance to the child and her altruism toward victims of distress would confront the child with ambiguity and conflict. These should be expected to interfere with learning concern for others.

In summary, in examining the influences of the experimental rearing environments on children's sympathetic helping behavior, we set out

with tentative hypotheses and many questions concerning how much and what kinds of conditions are necessary for the development of generalized altruism—in principle and in behavior.

Experiment 1

In this experiment, designed to develop sympathetic, helpful behavior, preschool children were the subjects. It was assumed that in their past histories, distresses were likely to have occurred. Difficulties in coping with the environment, physical hurts, deprivations, and losses of valued objects are very real to most children. Such familiar stimuli were used to develop in the children greater awareness of others' needs and to foster the inclination to help when help is needed.

Several weeks were taken to establish the experimenters as persons who were consistently nurturant or nonnurturant. After these "histories" of interaction, the children were given training intended to develop helpfulness. For part of the sample, the adult modeled altruism in symbolic media. For the rest of the sample, she modeled altruism also in social interaction with real "victims." Children's altruism was measured in a variety of ways and settings to assess their disposition to respond helpfully. The experiment extended over a 6-week period and included a followup 6 months later.

Experimental Distress Situations

The various situations of distress used in different phases of the experiment are:

Pictured Distresses

1a. Children with ice cream cones; one without
1b. Children with balloons; one without
1c. Children playing with toys; one without
2a. Child caught under barbed wire fence
2b. Child climbing tree, caught by clothes
2c. Child struggling to carry heavy plank
3a. Child falls off bike; knee bleeding
3b. Child hit on head by swing
3c. Child skating, falls down
4a. Child pushed out of turn on slide
4b. Child's bucket taken by peer
4c. Child's hair pulled by peer
5a. Dog's chain wound around tree
5b. Cat being chased by dog
5c. Birds in nest attacked by cat
6a. Dog hit by child's wagon
6b. Turtle tumbles down hill
6c. Dog with sore leg straining to reach bone
7a. Man trips on rock; glasses fall
7b. Man trips; drops briefcase
7c. Lady carrying packages; drops some
8a. Father sawing; cuts finger
8b. Mother peeling fruit; cuts finger
8c. Groceries fall from shelf onto mother's head

Dioramas

9. Monkey in cage trying to reach banana beyond grasp
10. Hot, thirsty bear in zoo with waterless pool
11. Baby bird fallen from nest
12. One horse with hay; one without
13. Dog caught in underbrush in woods
14. Bird caught by cat
15. Turtle helpless on its back at edge of pond
16. Children at table; one without a cupcake
17. Mother's string of beads broken
18. Child falling out of swing
19. Baby reaching for ball outside playpen
20. Children being chased by bees
21. Father stumbles on stairs; drops board and nails
22. Child struggling to pull cart up steps
23. Rabbits in woods; one caught in underbrush
24. Baby in highchair drops plate and spoon
25. Mother trips, dropping dishes
26. Two children in playroom; one has all the toys

Behavioral Incidents

27a. Mouse in cage, unable to reach food
27b. Kitten tangled in yarn, struggles toward its mother
27c. Two mice in cage; one in cramped space, no food; other with food and ample space
28a. Contents of tester's purse spill on floor

28b. Adult's special vase of flowers knocked off shelf
28c. Pile of papers falls off table
29a. Child heard crying in next room
29b. Story of another child who has had an accident
29c. Peer's block building, left in testing room, collapses
30a. Adult pricks her finger while pinning on child's name tag
30b. Adult hits thumb, hanging picture
30c. Adult with bandaged finger has difficulty buttoning sweater
31. One child at party without cake.
32. Kitten's food is covered
33. Mouse food spills out of cupboard
34. Adult bumps head picking up toy
35. Basket upset; contents roll on floor
36. Infant in playpen; toys outside pen

The subjects were 104 children ages 3½ to 5½ years attending a nursery school. Their family backgrounds were white, predominantly upper-middle class.

Baseline Tests of Helping Others in Distress

The experiment began with baseline testing to gauge the children's tendencies to help others. The test consists of eight (one of the three alternatives in each of the Sets 1 through 8) and four behavioral incidents of distress (from Sets 27 through 30). The misfortunes involve children, adults, and animals.

Each child was tested individually. Sessions proceeded with adult and child engaged in play. Midway through the session, the child's attention was directed to a "picture box." Eight of the pictures depicted misfortunes. Four pictures portrayed pleasant interactions.

Two questions were asked: "What's happening in this picture?" and "If you were there and saw that happening, what would you do?" The first picture, always one without a distress, was used to encourage verbal communication. The tester avoided giving indications of approval or disapproval for responses.

Four standard incidents (one of the alternatives from each of the triplet sets, Items 27 through 30) were interwoven in the play and testing activities. For example, as the experimenter brought the child to the picture box, she bumped a shelf from which a vase of flowers tumbled to the floor. During play, a kitten, entangled in yarn, was brought in.

Responses were scored on recognition that a misfortune had occurred, action taken to alleviate the distress, expression of sympathetic concern for the victim, and expression of concern about oneself.

Experimental Histories of High and Low Nurturance

Children were brought to a playroom in groups of six to eight. Appealing play materials were available. The adult was either nurturant or nonnurturant in her interactions with the children. Sessions were a half-hour in length, on 5 days, spaced over 2 weeks.

Two white women, experienced in nursery school teaching were the experimenters. They were trained for the nurturant and nonnurturant caretaking roles. As a nurturant caretaker, she initiated friendly interaction with the children, offered help and support, was sympathetic and protective, expressed confidence in the children's abilities, gave praise frequently, and responded to their bids for attention. Nurturance was not total and indiscriminate. Limits were set when appropriate. Also, caring for the group meant that some individual needs and requests were not met.

The nonnurturant adult maintained a reserved attitude, responding matter-of-factly to children's approaches and not prolonging them. She ignored requests for attention or gave minimal help. She disregarded or critically evaluated the children's achievements, gave many directives, maintained an

aloof supervisory role, and did not become involved in children's play. Precautions were taken so that children would not experience undue anxiety.

The play groups were homogeneous in age with nearly equal numbers of boys and girls. There were seven play groups under each condition. Experimenter A conducted five high- and five low-nurturant groups; Experimenter B conducted two of each. Fifteen children served as controls.

Posthistory Evaluation

Might the consistent interactions with a nurturant or nonnurturant adult influence the children's consideration for others? To ascertain the possible influence of these "histories," six of the play groups were retested on forms equivalent to the baseline, on the day immediately following the fifth play session and prior to the beginning of training.

Training Conditions

In the training sessions, each adult *continued* to interact in her nurturant or nonnurturant fashion, but her teaching procedures with regard to altruism were identical regardless of nurturance variations. She modeled awareness of needs, sympathy, and help of victims of distress. Two training programs were used. A procedure common to both was one in which helpfulness was portrayed through play materials (dioramas). The model expressed altruism symbolically through toy actors, and with verbalization regarding her altruistic acts, motivations, and the consequences of her behavior. This modeling was midway between modeling precept and behavior. It constituted the entire program for 36 of the children (Type A training). Training for the rest of the children was extended to include pictured distresses and behavioral incidents with live victims (Type B training).

Type A training: *Dioramas of distress*—Miniature models were used to portray distresses. Street scenes, family scenes, play scenes, and animal scenes were represented, each showing a "drama" of misfortune. In two sessions of training, pairs of dioramas were arranged on tables around the playroom. On one day, all the distresses involved animals; on the other day, people. When the child arrived, the experimenter greeted him with a task-oriented introduction (e.g., "We have some animals here today. They need someone to take care of them. I'll have the first turn and the next turn will be yours.").

Modeling always consisted of the adult's verbalized awareness of the distress, her sympathy and help for the victim, her pleasure or relief at the comfort or well-being that resulted, and her use of the word "help" to summarize what had been done. For example, she turned to the first diorama, the monkey trying to reach the banana, and said, "Oh, Mr. Monkey, you must be hungry. You can't reach your food. I'll help you. Here's your banana. Now you won't be hungry." She then uncovered the paired diorama and told the child that it was his turn. If the child retrieved the banana for the monkey, the adult said, "I think the monkey feels better because you gave him his food. He isn't hungry now." If the child did not help, the adult went on to the next set of dioramas, repeating the procedures.

The dioramas for adult and child were identical in the first pair. In Pairs 2 through 6, the experimenter's and the child's dioramas varied slightly. To examine immediate generalization, a seventh diorama was presented to the child. At the end of each session, the adult expressed approval

of the child's efforts, again clearly labeling the activity as one of bringing benefit to another.

Type B training: Dioramas, pictures, and behavioral incidents—In the extended program the week following, the children came to their usual groups. In each of two sessions, two distresses involving real victims were embedded in the activities. For example, while an adult confederate was trying to retrieve some supplies. she banged her head against the table. She grimaced and held her head. The experimenter responded warmly and put her hand on her shoulder: "I hope you aren't hurt. Do you want to sit down a minute?" The victim responded appreciatively. The other distresses involved a child and animals.

Later in each session, seven pictures, some different from and some the same as those in baseline, were introduced by the confederate. She asked the experimenter to respond to them in the way the children had been asked at the baseline: "What is happening in this picture?" and "What would you do if you were there?" The experimenter expressed concern for the victim ("That boy is falling out of the swing. I hope he doesn't hurt himself") and her intention to help ("I'll pick you up"). The confederate commented approvingly.

Evaluations of Learning

The altruistic responses of the children in the experimental and control conditions were assessed 2 days after the last training session. Four dioramas were in the playroom. An adult commented, "Here is something you can do while you're waiting." After sufficient time had elapsed to determine whether or not the child would help the victims, the tester arrived and ushered the child into the adjoining room. The child was retested on a new picture series and new behavioral incidents.

To measure durability and generalization, there was additional testing 2 weeks later. Two incidents were arranged that were as much as possible removed from the personnel and immediate environs of the experiment. They were carried out in a house adjacent to the school. A mother and year-old baby were visiting there. Each child was invited to come to see the baby. While waiting for the baby to be ready, an assistant and the child looked at some picture books. While they were looking, a basket of spools and buttons "accidentally" fell off the table. After sufficient time for the spools to be gathered by child or adult, the mother beckoned the child to the baby's playpen, and together they played with the infant. Then the mother asked the child to look after the baby while she went to get juice and crackers. As she left, the mother picked up a blanket from the floor. In so doing, toys that had fallen outside the playpen became visible. If the child had not retrieved the baby's toys, the mother did so when she returned. She chatted briefly and pleasantly terminated the visit.

Long-Term Retention of Experimental Influences

The subjects were seen 6 months later. Children who had had Type B training and nine children in the control group comprised the sample.

The child was shown two photographs, one of the experimenter and one of a stranger. He was asked if he knew either person and to describe the experimenter and some of the things they had done together. Responses were coded as friendly ("She helped me with the big trucks"), unfriendly ("She says stop playing") or irrelevant to affective interaction.

A diorama from training was used as a prop in questioning the child about the principles or considerations underlying his offering of help. The interviewer invited the child to "have another turn" with the diorama. If he gave help (e.g., picked up the spilled dishes for the mother), he was asked: "You helped the mother get her dishes. Why did you help her?" "What would happen if you didn't help?" "Why was helping a good thing to do?" and "If you didn't help, why would that be bad?" If the child did not help, he was requested to do so, and the same four probes were used.

Effects of Socialization Procedures

Baseline levels—Four experimental groups and the control group were compared on expressions of altruism on pictures and behavior incidents. The groups were equivalent at the beginning of the study. Their starting point was a moderate degree of recognition of the misfortunes portrayed in the pictures (an average of four out of eight), but, by the criterion of offering help, altruism was rare. With pictures, the average was one out of eight; with behavioral incidents, less than one out of four. It is possible, therefore, to talk about the development or acquisition of altruism in these children.

Altruism after Histories of High and Low Nurturance

Retests on pictures and incidents after histories of nurturance and nonnurturance, but before specific training, indicated that no appreciable change had occurred.

Effects of Training

The influences of training were assessed in each of these forms—dioramas, pictures, and behavioral incidents. Overt helping (or, on the pictures, offering help) is represented by acts such as freeing a toy rabbit from the underbrush, offering an ice cream cone to a child without one, and picking up an adult's spilled materials. Children's feelings or motives were inferred from spontaneous expressions of sympathy ("Poor doggie is hurt") and of concern for oneself ("Somebody could push me").

The children found the dioramic materials interesting. After each demonstration by the model, the children, with few exceptions, responded as the model had. Likewise, on the unpaired diorama at the end of each series, 93 percent of the children helped on both training days. About half of the children, regardless of nurturance conditions, accompanied their helping with sympathy. Since helping during training was in the presence of the model and closely following her demonstrations, the test of learning was not a demanding one.

The second set of tests was 2 days later, with model absent, and with new as well as familiar distress configurations. Children in all experimental groups gave help to the majority of the victims. The experimental groups differed significantly from the control children, but not from each other. There were relatively few verbal accompaniments. From 18 percent to 26 percent of the experimental subjects, and none of the control children, expressed sympathy; no one verbalized self-interest.

On the pictured distresses, children whose training had been only on the dioramas showed no transfer to pictures. On the other hand, children who had observed the model's interpretations of pictures showed marked changes. They offered help, on the average, in five out of eight pictures, a substantial difference from the other groups. Increases occurred equally in

the nurturant and the nonnurturant conditions.

Children's responses on the pictures dealt mainly with ways to "right" the circumstances causing the distress ("I'd get him a Band-aid" or "I'd pick up her packages"). There were relatively few cues regarding sympathetic or unsympathetic feelings. In Type B training groups, regardless of nurturance conditions, the percentage of children verbalizing sympathy more than doubled, from 20 percent on pretraining to 50 percent on posttraining measures, while the percentage expressing self-interest declined from 73 percent to 49 percent. Since there was no direct teaching to eliminate the self-centered reactions, one might interpret this decrease as learning by inference not to respond out of self-concern. Among children in Type A training and in the control condition, changes from pretest to posttest were small, for sympathy 8 percent to 14 percent and for self-concern, 56 percent to 58 percent.

With the behavioral incidents, testing moved out of the symbolic realm into real interactions. Incidents were without either a request or a pause that might signal that a response was expected. Responses to the incidents depended on the child's unprodded awareness of the distress and his inclination to enter into the event.

Helping occurred infrequently. Expressions of sympathy also were infrequent, and so too were expressions of self-concern. In contrast to the effects on the symbolic materials, training had little influence on altruistic behavior.

This conclusion was not upheld, however, when the children's altruism in the two delayed incidents of distress was examined. The general level of altruistic responding was considerably higher than in the incidents embedded in the testing sessions. Moreover, training resulted in significant differences among the groups in frequencies of helping. The condition that stands out from the others is the Type B training by a nurturant model. Eighty-four percent of these children spontaneously gave help in one or both of the incidents; 24 percent helped in both. The children with extended training from a nonnurturant adult were next most responsible, but they, like children from Type A training, did not differ from the controls.

Sympathetic expressions, too, differed among the groups and were most frequent among the children from the nurturant, extended-training condition. Verbalized self-interest and hostility toward the victim were infrequent and mild in tone in children of all groups.

When amount of overt helping and sympathetic concern on both incidents are combined in a single index of altruism, children in the high-nurturant, Type B training diverge significantly from other groups. Thus, the optimal condition for the development of sympathetic helpful behavior was one in which children observed an adult manifesting altruism at every level—in principle and in practice, both toward the child and toward others in distress.

What is to be concluded from the multiple assessments regarding the learning and generalization of altruism? Had a single measure of outcome been used, we would have arrived at different conclusions, depending upon which criterion had been chosen. Each conclusion relies on an assessment that taps different elements —precept, feelings, inclination to intervene to take responsibility in behalf of someone in need. The fact that the different socialization conditions influenced these elements differently

provides bases for understanding what has been learned and the processes involved. It is important to try to bring the totality of conditions and results into order with one another.

Six Months Later

Did the present experiment leave any lasting imprint on the children's feelings about helping? And were the nurturant and nonnurturant adults remembered differently? Three-fourths of the children remembered the experimenter and gave descriptions of their past associations together. The nurturant adults were recalled as friendly by 59 percent of the children, as unfriendly by 9 percent. Parallel reports regarding the nonnurturant adults were 41 percent and 22 percent, respectively.

When presented with the diorama, the majority of the children aided the victim. Consistent sympathetic reasons for helping were given by 47 percent of the children who had had a nurturant experimenter, 27 percent of the children who had had a nonnurturant adult, and 29 percent of the controls. Predominantly self-centered reasons were given by 7 percent of the children from the high-nurturant condition, 18 percent of the children from the low-nurturant group, and 43 percent of the controls. These trends favor the nurturant training condition and are consistent with the intent of this training—to foster helping for sympathetic reasons.

Experiment II: A Replication

A nurturant adult and diversified modeling procedures involving symbolized and behavioral altruism were the conditions repeated on a second sample of children, different in background from the children in the first study.

The subjects were preschool children, aged 3½ to 5½ years, in day care centers in the inner city. Most were black and from low-income families.

Procedures were like those in the main experiment. New testers and a new experimenter were used, and the stimulus materials were altered: The persons in the pictures and in the dioramas were of both races. The mother and baby in the delayed incident were black; the adult in the delayed incident was white; experimenter and testers were white.

Altruism After a History of Nurturance

A history of nurturant interaction with the adult model did not result in significantly increased responsiveness to distress. On pictures, the means on helping changed from .56 pictures at baseline to 1.44 pictures after nurturant histories. None of the children helped the "distressed adults on the baseline incidents; 3 of the 18 children helped after the nurturant history.

Effects of Training

Children's scores on helping and sympathy were compared with their own pretraining levels, with scores of the control children, and with those of the children from the experimental condition in the first study.

The first evidence came from the training session when the experimenter modeled help and sympathy on the dioramas. The children followed the adult's example, with few exceptions, on each of the six paired dioramas and on the unpaired distress. Sympathy was expressed by a third of the children.

Findings on the other criteria of altruism were consistent with the findings of the first experiment. Helping occurred with high frequency on the pictures and dioramas. There was lit-

tle increase in altruism in the incidents embedded in the testing sessions, but altruism was expressed in the delayed incidents. The ratings of altruism on the delayed incidents, combining overt action and sympathy, were also similar for the two experiments. Children's expressions of concern, whether reflecting sympathetic or self-centered orientations, were also of comparable magnitude in the replication and the earlier sample.

Toward Further Research

A developmental theory of altruistic motivation buttressed by systematic developmental data and a clear delineation of altruism from altruistic-like behaviors are much needed. Two lines of research should be pursued: one with a focus on the origins and development of empathic and sympathetic capabilities, the second concerned with the phenotypic behaviors that result in benefit to others. In the latter approach, the objectives would be to determine the rearing histories or antecedents or contextual variables associated with the various kinds of motivations and purposes served by altruistic-like responses. The first endeavor is perhaps more complex. One beginning might be the investigation of the earliest processes of differentiating self from others. One must look for the beginnings of empathic and sympathetic responding and for the conditions that support or constrain such development. What kinds of capabilities are necessary for altruistic feelings and behaviors? The young child is generally viewed as unable to take the perspective or role of the other person, especially with regard to the physical world. Can one assume that this holds true for the child's capacities for comprehending the perspectives and feelings of others? Are there regular, invariant stages in these sensitivities and judgments? Perhaps there is need to concern ourselves with not only the beginnings of altruism, but also with how altruistic motives are lost or bred out of the individual.

A much broader range of donor-recipient behaviors and more significant kinds of events and behaviors must be investigated in and out of the laboratory before the complexities of altruism are well understood. Research needs to be pursued on many fronts—for scientific and humanitarian reasons—for the fact remains that investigation of the idealized behaviors of kindness and sympathy toward fellow beings has moved slowly in the behavioral sciences. Moreover, there is no compelling evidence to indicate that in the rearing of its children, society has given high priority to the inculcation of personal concern for the welfare of others.

Condensed with permission from *Developmental Psychology*, 8(2):240–260, 1973.
Copyright 1973 by the American Psychological Association, Inc. Reprints of original article from Marian Radke Yarrow, Ph.D., Chief, Section on Developmental Psychology, National Institute of Mental Health, Bethesda, Md. 20014

Learning Theory and Prosocial Behavior

D. L. Rosenhan

To speak of learning theory in relation to altruistic prosocial behavior is to speak of a profound paradox, for learning involves reward and altruism appears to involve none. How then are altruistic behaviors acquired, and why do we engage in them? Let me make clear that I take a narrower view of prosocial behavior than is often taken by other theorists. In general I exclude reciprocal acts and all others wherein there is clear or presumptive expectation of external or reciprocal reward.

The kind of prosocial behavior that is theoretically challenging, that captures the learning theory paradox, is that which suggests that a person is giving up rewards without apparently gaining any in return. Such prosocial behavior implies that something other than external reward is operating to promote the behavior.

In short, while the bounds of prosocial behavior are not rigidly delineated, they include those behaviors where the emphasis is upon "concern for others." They include those acts of helpfulness, charitability, self-sacrifice, and courage where the possibility of reward from the recipient is presumed to be minimal or nonexistent and where, on the face of it, the prosocial behavior is engaged in for its own end and for no apparent other.

The Role of Affect

To the extent that prosocial behavior involves foregoing rewards for the self while alleviating the distress of others or promoting their gain, it can be argued that something must replace or be more powerful than the reward for the Actor. In order to forego reward or to suffer punishment on behalf of another, there must be some amplification of affect for, and cognition about, another person or cause. That amplification of affect and cognitive representation of another person, often called empathy or sympathy, is frequently seen as the basis for altruistic acts.

Empathic conditioning — A weak form of empathy can be trained in monkeys. After monkeys have been trained to avoid shock in response to nonsocial cues, one monkey will respond to the distress cues of the other in order to avoid giving shock to himself and the other. A more advanced form of empathy is demonstrated in experiments where a monkey avoided pulling a chain which provided him with food while simultaneously shocking another monkey. A second chain was available to the monkey which provided him food without inflicting suffering on the other. It can be held that a certain form of empathy negotiated the choice between the two chains.

Several experiments with children have demonstrated the power of empathic affect in forsaking material rewards: Young children were exposed to a conditioning paradigm wherein an experimenter responded joyfully to the onset of a red light. Joy was shown by expressive cues (a broad smile, coupled with appropriate verbalizations) and affectional ones (a hug for the child). The child then operated an apparatus to produce either the red light (and joy for the experimenter) or candy for herself. Compared to control children who had experienced only the affectional or expressive cues, children in the combined condition chose to turn on the light more often

than to gain candies. Both sets of experimenter behaviors were found to be critical in the formation of this altruistic response.

A subsequent experiment demonstrated that the sequence of affectional and expressive cues made little difference in the acquisition of the altruistic disposition. Moreover, the investigators demonstrated that the conditioning paradigms remain powerful during the subsequent test condition regardless of whether the experimenter continues to display expressive cues.

The conditioning paradigm applies to the empathic response to suffering, as well as joy. In a three-phase experiment to demonstrate these mechanisms, during the first phase both the child and the experimenter heard an aversive noise through earphones. The experimenter evidenced distress by placing her head in her hands. During the second phase, only the child wore the earphones and heard the aversive noise. In the process of terminating the noise in the child's earphones, the experimenter forsook the opportunity to make a correct choice on a discrimination task and to gain rewards. The third phase tested whether the child had acquired the disposition to reproduce the experimenter's response, now with another child who was distressed by the aversive noise.

The experiment offered strong evidence for the efficacy of empathic conditioning (Phase I) and modeling (Phase II) in the production of sympathetic responses. Interestingly, when the distressed child failed to emit distress signals, the empathically conditioned child continued to offer nearly as much "help" as he had in the original sequence. Such actions suggest the operation of cognitive, as well as affective, components in the elicitation of distress-terminating behavior.

We know very little about the durability of empathic conditioning, but one is inclined to suspect that its long-term effects are in some way controlled by the nature of the cues that elicit empathic responses. For example, adults will rapidly learn to decrease the latency of a buttonpressing response that is designed to terminate the shock received by a confederate who is suffering before the subject's eyes. On the other hand, the sympathetic responses of adults are weak to stories about others in distress, unless the listener had previously role-played a distressing role. Such role-playing might serve to reintegrate or "reinstate" earlier empathic conditionings and so promote greater sympathetic responsiveness.

Affect—The hunch that affect may mediate altruism is supported by studies that indicate the importance of feeling as a basis for helping others. In a retrospective study of the abolitionists, affect was strongly implicated in their courageous behavior. Similarly, sympathy for the victims appeared to motivate many of the people who attempted to rescue Jews, Gypsies, and American servicemen from the Nazis during the Second World War.

Thus, the presence of affect, sympathetic or empathic, directed toward a potential recipient of prosocial activity seems to be fairly well documented and possibly understood through the empathic conditioning model. There is, however, a kind of affect that is not so well understood: Various forms of prosocoial behavior have been shown to arise from positive affect that resides within the donor and that is not directed toward the recipient. In a naturalistic study of early Civil Rights workers, people who were deeply committed to political education and registration of black voters in the South and who had revealed that commitment by giving up the comforts of

home and job in order to go South for a long period of time were found to have had, and to have continued to maintain, relationships with parents that were characterized by strong positive feelings. While this is a correlational finding, the possibility that positive affect precedes and promotes prosocial behavior is supported by laboratory investigations.

The prior experience of success promotes helpfulness and charitability in a wide variety of contexts. Moreover, the positive affect arising from such diverse experiences as finding some money in a telephone booth or being offered a cookie similarly serve to promote helpfulness and charitability. Neither learning analyses of conditioning nor social psychological ones of social influence and cognition have explained the phenomena, but accumulated evidence strongly implicates the role of affect in the establishment and maintenance of prosocial activities.

Observational Learning

Much as experimental studies of altruism place a heavy burden on traditional theories of reinforcement to explain these phenomena, so do they place a similar burden on theories that attempt to explain observational learning. Some investigators invoke the notion of "generalized imitation" to account for all modeling phenomena. According to their view, imitation is a matter of conditioned reinforcement. They theorize that when aspects of the model's behavior have been reinforced, gradually "being similar to the model" itself becomes sufficient reinforcement, even when no particular and discrete reinforcers are being emitted by the model. If conditioned reinforcement operates to promote generalized imitation, then children and adults would imitate indiscriminately. The fact is that both children and adults manifest considerable discrimination in matters of imitation. They pick and choose the people, the behaviors, and the times that they will imitate.

Others hold that observational learning is maintained solely by the presence of extrinsic reinforcers. While this may be the case for many behaviors, it clearly cannot be applied to any situation where an individual behaves in the relative absence of social controls. And, indeed, a number of laboratory situations have been carried out precisely to elicit and maintain observational altruistic learning without extrinsic reinforcers.

Yet another theory of imitative learning holds that observational learning is essentially regulated by its anticipated consequences. On its face, it serves no better than the earlier ones to explain altruistic phenomena. When a child observes a model contributing to a charity, what are the anticipated consequences? How might the anticipated consequences of this act be so palatable to the child that they would overcome his reluctance to part with his money? One possibility is that being charitable is self-reinforcing. In the context of imitating a model who has just been charitable, this view would hold that children tell themselves that they are "good" because they have contributed, which allegedly is nearly as good as having someone tell them that they are good, or even giving them money for having been good.

The notion of self-reinforcement as an internal event is increasingly attracting attention and empirical support. A summary of recent studies indicates that children and adults establish and maintain behaviors in a variety of contexts through the administration of self-rewards and self-pun-

ishments. It is quite possible that in the context of altruistic behavior in particular, and moral behavior in general, the notion of self-reinforcement indeed explains more than has ever been observed. For if it were the case that children self-reward for virtue and self-punish for vice, all of them would be earthbound angels, and so would we!

The Role of Cognitive Factors

Cognition plays some role in the elicitation of altruistic behavior, but the nature and limits of that role are not well understood. Evidence suggests that observational learning, which itself is heavily implicated in prosocial phenomena, is related to cognitive development. Moreover, there is evidence that the acquisition and elicitation of generous behavior increases with age and age is related to cognitive development. Finally, there is evidence that amplifying cognition within an experimental context increases altruistic behavior. In a series of experiments, we have found that telling children about the consequences of being orphaned elevates their contributions to an Orphans' Fund.

It is likely that cognition of the needy other plays a strong role in altruistic behavior, but amplifying cognitions about the virtues of altruism per se rather than about the object of the altruistic act seems to have little effect. A series of experiments yielded the powerful finding that children are consistently much more impressed by, and imitative of, behavior than they are by a model's preaching. When the model gives to charity the child gives; similarly, when the model himself fails to give to charity the child also fails, regardless of how the model preaches the virtues of charitability.

In the study of Civil Rights workers mentioned earlier it was found that those individuals whose involvements in Civil Rights activities had been transient and peripheral offered a much more elaborate rationale for Civil Rights efforts than did those whose involvement had been relatively more enduring and committed. It seemed that cognitive elaboration served the purpose of muting prosocial involvement. At least, it seemed negatively correlated with it.

The general burden of these findings promotes the speculation that cognitive factors play a role in the elicitation of altruistic behavior when, and only when, they amplify empathic and sympathetic affect. Thus, cognitions about the objects of one's largesse would likely increase one's contributions to them, whereas cognition addressed to the altruistic act itself will likely result in no material increase in altruistic propensities.

What then can briefly be said about the interaction between learning theory and prosocial behavior? First, a fuller comprehension of altruistic behavior calls for an expansion of our notions of learning, such that they incorporate affect and cognition. Second, the best explanation of altruistic behavior acquired on the basis of observation probably lies in notions of self-reinforcement. Subsequent research in prosocial behavior will need to provide independent evidence for the operation of self-reinforcement and will thus provide further data for a psychology of self-control.

Condensed with permission from the *Journal of Social Issues*, 28(3):151–163, 1973. Copyright 1972 by the Society for the Psychological Study of Social Issues. Reprints of original article from D. L. Rosenhan, Ph.D., Professor of Psychology and Law, Stanford University, Stanford, Calif. 94305

Moral Conduct and Moral Character: A Psychological Perspective

Robert Hogan

This paper describes a new psychological perspective on moral conduct and presents empirical findings which follow from this perspective. The burden of the paper is to argue that development of moral character can be described, and moral conduct can be explained in terms of five concepts: moral knowledge, socialization, empathy, autonomy, and a dimension of moral judgment.

Assumptions

As an alternative to explaining social behavior in terms of needs, drives, traits, or mechanisms of coping and defense, it might be useful to consider man as a rule-formulating and rule-following animal. This argument derives from a more comprehensive theory of social behavior based on psychological role theory, and an image of man as a game-playing animal. While the details of the argument are not important here, three assumptions are: First, that all purposive social behavior occurs within matrices of overlapping human rule systems (e.g., grammars, legal codes, rules of courtesy) which have varying degrees of specificity. Second, associated with every human rule system is an ethic, variously called sportsmanship, fairness, justice, equity, or the spirit of the game. Third, the outlines and patterns of social behavior can be explained in terms of formal properties of various rule systems.

This paper also assumes that morality is a natural phenomenon, an adaptive response to evolutionary pressures, and that an understanding of moral behavior is relative to knowledge of man's biological and psychological nature. Many biological mechanisms conspire to provide the preconditions for moral conduct; however, four are particularly relevant. First, the dynamics of human culture presuppose "the role of authority-acceptor." Consequently, a disposition to comply with authority is considered to be part of man's innate constitution, and this disposition is seen most vividly in children. Second, man is naturally disposed toward altruistic feelings of group loyalty. Third, there is a strong tendency for rule-governed behavior to become ritualized, autonomous, and performed for its own sake. Finally, there is the phenomenon in which the young of a species internalize adult behavior patterns during "sensitive periods."

Many contemporary psychologists consider moral action to be in some way distinct from ordinary social conduct. In contrast, this paper makes no sharp distinction between social and moral rules. It assumes that an evaluative tendency is an integral part of social conduct, and that morality has a social job to do; that is, the function of morality is to regulate and moderate human affairs.

Definitions

Morality—The basis of morality is a system of rules of conduct which defines a network of reciprocal rights and obligations and which prohibits at least gross acts of malevolence. Moralities are systems of rules external to people, designed to guide social or interpersonal behavior, and which may to some degree be codified. This definition does not require a morality to be entirely compatible with or to further unequivocally the welfare of indi-

viduals subject to it, nor does it require that a morality be completely equitable when reviewed from a perspective outside the system. In fact, the demands of justice or fair play in a given situation may run contrary to the prevailing moral code.

Moral behavior — Moral behavior consists of actions carried out with regard to the rules that apply in a given social context. Obeying, disobeying, enforcing, subverting, learning, and using rules are all types of moral conduct or misconduct requiring explanation; misconduct is thus considered a subclass of moral behavior. For pragmatic and statistical reasons, one form of moral behavior (obedience or conformance) is usually salient. The most impressive feature of everyday life is the degree to which people obey the norms of their culture. Even such debauched men as Aliester Crowley, the Marquis de Sade, and Ceseare Borgia committed only an insignificant number of deviant acts each day, and these were of a highly idiosyncratic and specialized nature. Moral behavior comes down to following or disregarding a social rule of some sort; consequently a major problem for the psychology of moral conduct is to account for social compliance or noncompliance.

Moral character — Freud pointed out that neurotic symptoms could be understood only by considering them within the context of the character structure of the person. Similarly, within the context of moral psychology, delinquency, civil disobedience, and altruistic actions can be understood only by taking into account the character structure of the person. The concept of character closely resembles the notion of personality. Character, however, is usually defined in terms of those dispositions and traits that are subject to moral evaluation. That is, character is defined not only by what a person does, but by his reasons for doing it, by the motives and dispositions that give stability and coherence to his conduct. A second problem for moral psychology, therefore, is to describe the dimensions along which character structure seems to vary.

The Model

There are five recurring themes in philosophy and psychology which explain a considerable range of moral behavior and define certain parameters of character development. These elements are at least conceptually independent and seem to characterize how people differ in their use of rules. The first dimension is moral knowledge. The second corresponds to socialization in the Freudian sense of superego development and is denoted by having an internal as opposed to an external viewpoint concerning the rules of one's society. The third involves role taking and the recognition of the rights of others; it is the disposition to adopt the "moral point of view." The fourth concerns the degree to which a person considers rules to be useful for regulating human affairs. The final dimension is defined by the degree of autonomy a person displays in his moral conduct.

Consider the following example. A student of modest talent, while taking a difficult examination whose outcome he believes will affect his future, observes the answer sheet of a gifted student lying in front of him. However, he ignores the answer sheet, thereby losing an opportunity to improve his score. How can we explain his action?

Moral Knowledge

Explanatory role of moral knowledge—The first answer to our question is that the student knows a rule that prohibits copying another person's test. This is important because

people can follow only the rules that they know. Moral knowledge means knowledge of moral rules, and a test of moral knowledge assesses the rules a person can state, or the variety of rules that he can correctly use. It does not determine how he feels about these rules, how he reasons with them, or how he evaluates them.

The next question concerns the kinds of things that are learned during the moral education of the child. Children seem to learn three types of rules: specific, primarily negative *injunctions* related to particular acts, such as "Don't get dirty," *moral principles*—general rules or norms of conduct that permit flexibility in social action and enable the child to choose between conflicting injunctions, *comparison rules*—cognitive strategies by which the person is able to compare what he is doing with an ideal norm of behavior. The first two are substantive while the third is procedural; that is, comparison rules operate primarily on injunctions while moral principles mediate between them.

Moral knowledge is important because it provides the potential for self-control. By learning a set of injunctions, moral principles, and comparisons rules, one acquires the cognitive foundation for self-criticism, which is a necessary (but not sufficient) condition for development of self-control.

Measurement of moral knowledge—Although considerable effort has been spent studying the behavioral implications of moral knowledge, this research has produced negligible results. Moral knowledge seems to be related to intelligence, background, and desire to make a good impression. Because we are normally justified in assuming that people know the rules, it seems naive to assume a strong connection between knowledge of the rules and willingness to abide by them. There are deviants in every society; however, no one doubts what is held to be right and wrong. The problem lies in learning to live with the "right" of one's society.

Socialization

The explanatory role of socialization—The second answer to the question is that our student may consider the rule about test cheating to be personally binding; that is, he has "internalized" the rules of the test taking. The term socialization has few distinctive conceptual properties remaining after years of uncritical use. For the purposes of this paper, a person may be considered socialized to the degree that he regards the rules, values, and prohibitions of his society as personally mandatory. Conversely, to the extent that one feels estranged from the rules and norms of his social group, he tends to be unsocialized.

Developmental antecedents of socialization—Most social psychologists assume some sort of natural antagonism between the individual and society. One might equally hypothesize, however, that children are not anarchical but social by nature, that they enter the world programed to be obedient, and that warmth and nurturance are essential in eliciting these tendencies. Thus, rather than ask what must be done to the child to fit him into society, it may be more important to ask what must be done in order to drive him out.

Considerable research has been directed toward discovering the developmental antecedents of socialization. The evidence strongly suggests that while warmth is important, "love is not enough." that as children become more mobile, control factors play a correspondingly larger role in socialization. Thus warm, nurturant, *and* consistently restrictive or "authorita-

tive" parents produce the most socialized children. The socialization process is largely completed by the time a child enters school and results in an authoritarian ethic of conformity.

Measurement of socialization—The Socialization scale of the California Psychological Inventory, an empirically keyed measure developed by comparing the responses of a large number of delinquents and nondelinquents, was designed to assess the degree to which a person has internalized the rules, values, and conventions of his society.

Two considerations suggest that further information is necessary in order to assess adequately a person's character structure. First, other things being equal, well-socialized persons are also likely to be stuffy, rule-bound, pedantic prigs (e.g., "moral realists"). Second, many people who consistently comply with social norms did not enjoy the sort of childhood experiences that produce a high degree of socialization. Within any population of nondelinquents, it is possible to identify a subgroup characterized by low Socialization scores. Phrasing the question in terms of our question, how can we explain the student's refusal to cheat if we discover that he is in fact poorly socialized?

Empathy

Explanatory role of empathy—For at least 300 years philosophers in the Anglo-American (or utilitarian) tradition of ethics have assumed that man has an innate social sensitivity which plays an important role in moral development. John Stuart Mill suggested, for example, that man is naturally sympathetic and that a sense of duty depends on the development of these social feelings. Thus, when a person acts from the moral viewpoint, he tries to consider the implications of his actions for the welfare of others. The disposition to take the moral point of view is closely related to empathy or role taking.

Several social psychologists have also assumed that people have an innate capacity for empathic sensitivity which is normally elicited by social experience. For these role theorists, group participation and an increased sensitivity to the demands of others results in self-consciousness which, in turn, causes the child to observe the rules of his society. The implications for the explanation of social compliance is that the test-taking student may refrain from cheating because he is sensitive to his peers' expectations concerning test behavior: cheating might equally be seen as taking unfair advantage of the other students.

Measurement of empathy—A 64-item, empirically keyed empathy scale was developed by comparing the responses of 211 subjects, divided into high- and low-subgroups on the basis of empathy ratings, across 957 items taken from the California Psychological Inventory, the MMPI, and a special pool of additional items. The scale correlated zero with Socialization, indicating that the two dimensions are indeed independent.

If socialization and empathy are independent aspects of moral development, then individual differences along these two dimensions should be associated with differences in character structure and moral conduct. Specifically, other things being equal, persons scoring low on both scales tend to be delinquent. Those receiving low scores for empathy but high scores for socialization tend to be rigid rule followers. Persons with low scores for socialization but high scores for empathy tend to be cavalier about conventional rules: they are "emancipated," mildly sociopathic members of normal society, that is, they double-park, do not

return borrowed books, and smoke marihuana. Persons with high scores for socialization and empathy tend to be morally mature; their compliance with social rules is effortless but their attitudes are tempered by a sympathy for the moral frailties of others.

Developmental antecedents of empathy—It seems reasonable to assume that four factors are related to the development of empathy. There seems to be some association between intelligence and empathy. Second, being required to adopt alternative perspectives vis-á-vis one's parents should facilitate the development of role-taking skills. Consequently, parents who either overindulge or consistently reject their children probably fail to stimulate their children's natural empathic tendencies. Third, the child must also be willing to act on his empathic perceptions. Such a willingness probably depends on two kinds of experience: receiving empathic treatment at some time in one's life and enduring sufficient injustice, ridicule, betrayal, or persecution that the experience makes a lasting impression. The fourth factor is a relative absence of repression or denial—an openness to inner experience, a willingness to attend to intuitive promptings and nonverbal cues. The development of empathy, like cognitive development generally, is probably finished by late adolescence and results in what may be called an "ethic of reciprocity," characterized by cooperation and peer group conformity.

In spite of the importance of an empathic disposition in the formation of moral character, it is neither the only nor the most important factor. There are two reasons: interviews with subjects who receive very high scores on the empathy scale suggest that they often suffer from an excess of role taking, are too concerned with the expectations of others, excessively inhibit hostility and aggression, and suffer from identity diffusion. Furthermore, many persons whose behavior accords with social norms and conventions have experienced none of the developmental circumstances necessary to elicit an empathic disposition. To return to our case, how might we account for our student's reluctance to cheat if we discover that he is both unsocialized and nonempathic?

Ethics of Conscience and the Ethics of Responsibility

Explanatory role of the ethics of conscience and the ethics of responsibility—There is a branch of moral philosophy which analyzes and evaluates arguments used to justify social and legal institutions. It considers questions of the type: To what kinds of considerations is appeal properly made when the authority of the political and legal order and our obligations comply with its dictates are called into question? In the history of modern legal philosophy two forms of justification recur. Advocates of the first point of view argue that there are higher laws, unrelated to human legislation, which may be discovered by intuition and reason; a human law is just if, and only if, it corresponds to or can be derived from the higher laws.

Those who take the second viewpoint justify their arguments in terms of the instrumental value of the manifest law as a means for promoting the general welfare of society. Laws and political institutions are merely instruments for the realization of the common good; just laws are those which tend on the whole to maximize happiness.

With certain exceptions, the first position has traditionally had the greater influence. Utilitarianism and legal positivism emerged in the 18th century as a reaction against the

theory of higher law. The utilitarian philosphers thought that the concept of higher law was an arbitrary standard for appraising institutions, and that it encouraged an anarchical individualism inconsistent with the rule of law and settled society.

The intellectual and psychological postures underlying the higher law and positive law traditions in moral philosophy have numerous counterparts in everyday life and represent a relatively unexplored dimension of character development. The everyday equivalent of higher law morality can be called the ethics of personal conscience, while the ethics of social responsibility reflects the positive law tradition. The ethics of conscience is the dominant viewpoint of the contemporary American intellectual establishment. On the other hand, Supreme Court Justice Frankfurter, Erwin Griswold, former dean of Harvard Law School and Solicitor General of the United States, and H.L.A. Hart, the distinguished English legal and moral philosopher, represent prominent recent spokesmen for the ethics of responsibility.

Consider again our noncheating student whom we have discovered is neither well-socialized nor empathic. If he advocates the ethics of responsibility, he may comply with the rules because they make his world more orderly and predictable. That is, a belief in the instrumental value of rules should produce social compliance despite deficient socialization and insensitivity to the expectations of others. Conversely, persons who are nonempathic, unsocialized, and endorse the ethics of conscience will likely be delinquent.

Measurement of the ethics of conscience and the ethics of responsibility —A measure of the disposition to adopt one or the other of these viewpoints has been developed. There are two forms of the test called the Survey of Ethical Attitudes. The following statements are representative: All civil laws should be judged against a higher moral law; right and wrong can be meaningfully defined only by the law; an unjust law should not be obeyed; without law the life of man would be nasty, brutish, and short.

The measure is uncorrelated with intelligence, and in two samples it discriminated strongly between persons whose vocational choice reflected a belief in law and established procedures (i.e., policemen, ROTC seniors) and persons who believed in civil disobedience as a means for promoting social change.

I assume that moral conduct is fundamentally "irrational," that differences in even such obviously cognitive phenomena as moral judgments derive from more basic personological structures. If so, then there should be personality correlates of the disposition to adopt the ethics of conscience or responsibility. Correlations with the California Psychological Inventory, the Myers-Briggs Type Indicator, and several other personality measures suggest that persons who adopt the ethics of personal conscience poses an interesting set of positive and negative characteristics. They are independent, innovative, and form creating; however, they also tend to be impulsive, opportunistic, and irresponsible. From peer descriptions the adjective with the highest correlation with the ethics of conscience was "rebellious." Persons whose moral judgments reflect the ethics of social responsibility also show a blend of attractive and disagreeable features. On the one hand, they are reasonable, helpful, and dependable; on the other hand, they often seem conventional and resistant to change.

Developmental antecedents of the

ethics of conscience and the ethics of responsibility — Interviews with high and low scorers on the Survey of Ethical Attitudes suggested that both groups were sensitive to injustice, but differed with regard to their perceptions of the sources of injustice in society. The ethics of conscience seemed related to the belief that people are naturally benevolent and that social injustice is produced by dehumanizing and oppressive institutions; the ethics of responsibility seemed to rest on the notion that people are naturally malevolent and that institutions restrain the implacably antisocial impulses of men. Home environments which encourage a belief in natural human goodness and a suspicion of institutions tend to promote the ethics of conscience. Conversely, parents who foster skepticism concerning the motives of others encourage a belief in the instrumental value of law and, consequently, the ethics of responsibility. Finally, while the moral and developmental implications of the ethics of conscience and responsibility can be properly understood only within the context of a person's total character structure, the most mature people should tend to cluster in the center of this dimension.

Autonomy

Explanatory role of autonomy— Two considerations suggest that the dimensions of moral development discussed thus far (i.e., moral knowledge, socialization, empathy, and the ethics of conscience-ethics of responsibility continuum) are, by themselves, incomplete either as explanations of moral conduct or descriptions of character structure. First, from a philosophical perspective, these dimensions reflect a distinct utilitarian bias. However, philosophers have argued that the truly moral man has an autonomous will and governs his actions by a personal sense of duty. Thus, from the viewpoint of traditional ethics, a complete description of moral development must include the factor of autonomy. The discussion of character development presented thus far also appears inadequate when seen from the perspective of common sense. That is, a well-socialized and empathic adherent of either the ethics of conscience or responsibility is socially conforming and is a model of his sociocultural milieu. However, social and legal institutions are never totally just, and political leadership is often misguided (if not corrupt). Consequently, it sometimes happens that a model citizen may act immorally as a result of complying with collective norms. The development of an autonomous set of moral standard serves to insulate one from the potential immorality of the community.

Returning for the last time to our noncheating student, he may refuse to copy not because he is socialized, not because he is concerned about the evaluations of his peers, not because he feels rules are useful, but because he considers cheating to be beneath his dignity as a person.

Antonomy is a troublesome concept. An autonomous person who is also unsocialized, nonempathic, and disregards the pragmatic value of rules as well, is likely to be autocratic and anticonforming, a great rogue and scoundrel. Obviously this dimension, like all the others, can never be considered in isolation.

Measurement of autonomy—Although social psychologists have spent a great deal of time studying suggestibility and conformity, not much is known about autonomy. One researcher gave the California Psychological Inventory to 30 fraternity members who were undergraduates at Johns Hopkins University. Eleven of

these persons rated all the others for autonomy using a 7-point scale. Each person was assigned an autonomy score based on the average of the 11 ratings he received. Eight of the 18 California Psychological Inventory scales correlated with these ratings: Dominance; Capacity for Status; Social Presence; Self-Acceptance; Good Impression; Communality; Achievement via Conformance; and Intellectual Efficiency. To estimate the pattern of personological variables most related to autonomy, a stepwise regression analysis was conducted, selecting five variables. Although the size of this sample permits only tentative conclusions, it appears that the autonomous person is strong, forceful, and self-ascendant; he manages his affairs very carefully and is little affected by others in choosing or achieving his goals. Such a person resembles an Old Testament patriarch or Melville's Captain Ahab.

Developmental antecedents of autonomy—There seem to be some important developmental precursors of autonomy. First, parents who are permissive, undemanding, passively accepting, or overprotective inhibit the development of autonomy in their children. Second, early development of cognitive and linguistic skills and stimulation of interest in school achievement seem to enhance a child's competence and, therefore, the self-esteem necessary for autonomous behavior. Third, parents who are themselves individualistic, independent, and demanding provide their children with the strongest models for autonomous conduct. Finally, parents who clearly label certain actions as praiseworthy or blameworthy, explain their rules and encourage verbal give and take, also promote the child's ability to "order" and control his own behavior. Autonomy probably does not fully emerge until a person leaves his peer group and begins his life (defined in terms of marriage and career). Then, in combination with socialization and empathy, autonomy may procuce an "ethics of equity"—in psychological terms, moral maturity.

Characterological Implications

Let us review the complete model by considering in what sense it can be called developmental. Two themes define the developmental perspective. The first is that there are endpoints to development, endpoints preceded by qualitative changes over time. According to the model, the ideal endpoint of moral development is moral maturity, defined in terms of optimal placement on the five dimensions; the practical endpoint is social conformance, which can be explained in terms of these dimensions.

Moreover, the emergence of socialization, empathy, and autonomy represent transition points which are followed by qualitative changes in the dynamics of social behavior. Until a child becomes socialized, he is egocentric, impulsive, and undisciplined. After socialization but before empathy develops, he is excessively respectful of adult authority. An empathic but nonautonomous person places a greater priority on human needs than on maintenance of rules; however, his conduct remains tied to the expectations of his peer group. It is only after a degree of autonomy has been achieved that behavior may become independent of external controls. In contrast, moral knowledge and the ethics of conscience–ethics of responsibility continuum are not developmental in the sense described here.

The second theme is that life is a continuous process of adjusting internal conditions to external demands; these adjustments are made necessary by changes which occur in both the

organism and the environment. This model incorporates this characteristic of developmental theory. The major problem for an infant is securing adequate nurturance and protection. As the child becomes mobile, he tends to wander from his mother's protection, thereby exposing himself increasingly to danger. Thus obedience to maternal commands facilitates mother-child interaction and improves the child's chances for survival. The primary developmental task for a child in the middle years is to become a social being, a process brought about almost exclusively through peer interaction. For the typical child such interaction begins around 4 or 5 years of age, where because adaptation to the group requires accommodation to a radically expanded set of norms, continued strict obedience to parental commands is maladaptive. The development of empathy greatly improves the capacity to anticipate and the willingness to comply with the expectations of the group—the prerequisite for sociability—and increases flexibility in peer interaction. Finally, the most important problem for the young adult is to establish his own life. Yet most young people are caught between the internalized demands of their family and the external expectations of the peer community. Thus the development of autonomy is an important solution to the functional dialectic of development; it allows one to deviate from both parents and peers, but in a (hopefully) prosocial fashion. Seen in this way, the emergence of socialization, empathy, and autonomy are adaptive within the context of the social environment during maturation; they are capacities which mediate both the needs of the individual and the demands of his social group.

This model differs from conventional developmental theories in one important respect. Most such theories describe development as proceeding through preset stages in a stepwise fashion, and successive levels can be achieved only after the preceding stages have been mastered. This paper suggests that socialization, empathy, and autonomy are major transition points in moral development which occur at progressively later points in time. Moreover, once attained, these capacities bring about qualitative changes in the underlying structure of moral conduct (which phenotypically may remain unchanged). In this model, however, attainment of the later "stages" is not dependent on successful transition through the earlier levels.

Because contemporary social theorists often seem unconcerned with the problem of conformity, one last comment is appropriate. The model defines the formal parameters of moral maturity. However, these qualities rarely exist in a single person. If so, then the conclusion is that most people are less than morally mature. Furthermore, the proportion of thugs and psychopaths in society seems independent of their place in the social order; social class determines the form rather than the frequency of delinquency conduct. In addition, evidence suggests that to expect people to be compassionate, charitable, and tolerant is patently unrealistic. As Camus observed, the "Be virtuous" of our confessionals reveals "a nostalgia at the same time as an ignorance"; it is a sterile exercise on a great subject.

Condensed with permission from the *Psychological Bulletin*, 79(4):217–232, 1973. Copyright 1973 by the American Psychological Association, Inc. Reprints of original article from Robert Hogan, Ph.D., Associate Professor, Department of Psychology, Johns Hopkins University, Baltimore, Md. 21218

The Hierarchical Nature of Moral Judgment: A Study of Patterns of Comprehension and Preference of Moral Stages

James R. Rest

The development of moral judgment has been characterized in terms of six stages. Each stage is defined as a distinctive orientation to moral problems, and it is claimed that the six stages represent an invariant, universal developmental sequence. Each stage is an advance over the preceding stage in being a more differentiated and integrated structure. In other words, the stages are hierarchically related: A new stage does not replace a previous stage. Rather the new stage is a transformation of elements of the old into a new emergent structure.

One implication of a stage hierarchy is that a higher stage is more complex than a lower stage and that a higher stage logically presupposes the lower stage. If logical complexity is parallel to psychological difficulty, then it follows that the stages are increasingly more difficult to comprehend, and that attainment of a more advanced stage presupposes attainment of the simpler, less advanced stages. Empirical demonstration is important because it would support the theory for why the stages are naturally ordered as they are and why there is not "skipping around."

Stages of Moral Judgment

The usual method of stage assessment is to present a hypothetical moral dilemma, ask the subject to tell what he would do, and ask for reasons for his choice of action. A scorer then classifies the reasoning according to established scoring guides. Evidence that the stages depict a natural sequence of development comes from observations that older subjects manifest higher stage characteristics, that over time subjects naturally tend to change "upwards," and that when change is induced it tends to be to the next highest stage. Whereas this method of stage assessment and this kind of evidence provide support for the sequentiality of the stages, they do not provide direct evidence for the hierarchical nature of the stages.

In studies of moral judgment, it is assumed that a subject's moral judgments are produced at the highest stage he is capable of. Also it is assumed that when a subject later produces moral judgments at a higher stage, that the change represents the acquisition of new capacities. Yet a subject might not produce moral judgments at the highest stage of which he is capable. And it is possible that changes of stage levels do not represent changes in capacity, but rather shifts in preferences for certain kinds of moral judgments. Therefore, to claim that any set of stages comprise a hierarchical order, more evidence is necessary than observing a natural sequence in changes over time. The sequence of stages observed in natural development has to be shown to be an order of increasing difficulty, and it must be shown that subjects prefer to produce or use the highest stage of which they are capable. Consequently what is needed operationally is: a *capacity* measure of stages of thinking which takes inventory of all the stages of thinking possible for the subject and a method of assessing the subject's *preference* for the various stages of thinking.

The logic of this study is similar to studies in psycholinguistics which test whether psychological difficulty is predictable from a particular theoretical scheme of syntactic complexity. If it were shown that the stages did not form an order of psychological difficulty, the hierarchical nature of the stages, or the analysis of the salient developmental characteristics, or both, would be questionable.

Prototypic statements were prepared for each of the six stages as stimulus material. The subjects discussed those statements and the discussions were scored for understanding of that stage's thinking. This gave a measure of comprehension for every stage. Previous to obtaining this measure of comprehension, subjects had been given a moral judgment interview so as to determine the subject's predominant stage (his "own" stage). In addition to discussing the prototypic statements from which were derived measures of comprehension, the subjects were also asked to indicate their preference for the statements, and hence, their preference for each stage of thinking.

The first hypothesis was that statements at stages above the subject's own stage are increasingly more difficult to comprehend, and that statements at levels below are comprehended even though the subject does not spontaneously use these levels. The postulation of hierarchical order of stages implies that the more advanced stages are more adequate ways of making moral judgments. Therefore, if a subject understands the underlying structure of prototypic statements, he should recognize the greater adequacy of the higher stage statement and express a preference for it. And so the second hypothesis was that insofar as the subjects comprehend various stages of thinking, they tend to prefer the highest comprehended. The third hypothesis was that there should be a match between the subject's spontaneous stage on the "pretest" interview and the highest stage that was comprehended of prototypic statements.

The subjects came from the 12th grade in a middle-class suburb. The subjects volunteered and were interviewed during free periods in school.

The first step was to "pretest" subjects for their spontaneous moral orientation, using the moral judgment interview. This involves presenting hypothetical moral stories, such as the "Heinz Story" and scoring the responses for stage of moral development.

In Europe, a woman was near death from a very bad disease, a special kind of cancer. There was one drug that the doctors thought might save her. It was a form of radium that a druggist in the same town had recently discovered. The drug was expensive to make, but the druggist was charging 10 times what the drug cost him to make. He paid $200 for the radium and charged $2,000 for a small dose of the drug. The sick woman's husband, Heinz, went to everyone he knew to borrow the money, but he could only get together about $1,000 which is half of what it cost. He told the druggist that his wife was dying, and asked him to sell it cheaper or let him pay later. But the druggist said, "No, I discovered the drug and I'm going to make money from it." So Heinz got desperate and broke into the man's store to steal the drug for his wife.

Should the husband have done that? Why?

Each subject's interview is depicted in terms of the proportion of his responses scored at each stage; the subject's predominant stage of usage is his "own" stage.

In the second phase a set of prepared statements was used. Following is a summary of considerations that went into making up the statements.

1. For the set of statements to one situation, the same five aspects were used for all stages. Hence, any differ-

ences between subject's comprehension of statements could be attributed to differences in stage and not to differences in aspect.

2. For each stage and aspect, one statement was written advocating one course of action and a second statement written advocating the opposite course of action. Hence, the exemplification of a stage-aspect feature was not confounded with specific actions.

3. The order of presenting the statements was counterbalanced. One-half of the subjects receive odd statements, then even statements; the other half receive even, then odd statements. Hence, statements of one stage were not presented all at one time and the action alternatives (e.g., steal, or not steal) were alternated.

4. Scoring of subjects' responses to the statements was done for each statement separately and "blind."

One set of 60 statements used the Heinz story as its background context (Situation III) and a second set of 60 statements used another story as background (Situation VI). The statements were balanced for stage, pro-con attitude, and substage aspect (e.g., "Motives and Circumstances in Judging Blame and Obligation"). The list below gives samples of statements (Situation III background, aspect on "Motives and Circumstances").

Six Stages of Orientation to Motives and Circumstances in Response to the Heinz Story

Stage 1. Pro: It isn't really bad to take it—he did ask to pay for it first. He wouldn't do any other damage or take anything else and the drug he'd take is only worth $200, he's not really taking a $2,000 drug.

Stage 1. Con: Heinz doesn't have any permission to take the drug. He can't just go and break into a store—maybe break through a window or break the door down. He'd be a bad criminal doing all that damage. That drug is worth a lot of money, and stealing anything so expensive would really be a big crime.

Stage 2. Pro: Heinz isn't really doing any harm to the druggist, and he can always pay him back. If he doesn't want to lose his wife, he should take the drug because it's the only thing that will work.

Stage 2. Con: The druggist isn't wrong or bad, he just wants to make a profit like everyone else. That's what you're in business for, to make money. Business is business.

Stage 3. Pro: Stealing is bad, but this is a bad situation. Heinz isn't doing wrong in trying to save his wife; he has no choice but to take the drug. He is only doing something that is natural for a good husband to do. You can't blame him for doing something out of love for his wife. You'd blame him if he didn't love his wife enough to save her.

Stage 3. Con: If Heinz's wife dies, he can't be blamed in these circumstances. You can't say he is a heartless husband just because he won't commit a crime. The druggist is the selfish and heartless one in this situation. Heinz tried to do everything he really could.

Stage 4. Pro: The druggist is leading a wrong kind of life if he just lets somebody die. You can't let somebody die like that, so it's Heinz's duty to save her. But Heinz can't just go around breaking laws and let it go at that—he must pay the druggist back and he must take his punishment for stealing.

Stage 4. Con: It is a natural thing for Heinz to want to save his wife, but it's still always wrong to steal. You have to follow the rules regardless of how you feel or regardless of the special circumstances.

Stage 5. Pro: Before you say stealing is wrong, you've got to really think about this whole situation. Of course, the laws are quite clear about breaking into a store. And, even worse, Heinz would know there were no legal grounds for his actions. Yet, I can see why it would be reasonable for anybody in this kind of situation to steal the drug.

Stage 5. Con: I can see the good that would come from illegally taking the drug, but the ends don't justify the means. You can often find a good end behind illegal action. You can't say Heinz would be completely wrong to steal the drug, but even these circumstances don't make it right.

Stage 6. Pro: Where the choice must be made between disobeying a law and saving a human life, the higher principle of preserving life makes it morally right—not just understandable—to steal the drug.

Stage 6. Con: There are so many cases of cancer today that with any new drug cure, I'd assume that the drug would be scarce and that there wouldn't be enough to go around to everybody. The right course of action can only be the one which is consistent with Heinz's sense of justice to all people concerned. Heinz ought to act not according to his particular feelings to his wife, nor according to what is legal in this case, but according to what he conceives an ideally just person would do in this situation.

Subjects were presented statements one at a time and asked to give equivalent recapitulations of the statement; to state how the statement compared with their own ideas; to evaluate or criticize the statements; to rate each statement from 1 to 5 on how convincing or persuasive an argument it presented; and to rank order the statements in terms of their comparative convincingness.

Comprehension

There were four major findings with regard to comprehension. The first is that a subject tends either to get nearly all hits for the statements of one stage or nearly all misses. In other words, comprehension of the various characteristics of a stage tend to cluster together.

Since comprehension scores for a stage tend to be either very low or very high for a stage, this justifies dichotomizing the scores at the 50 percent point and justifies talking about the comprehension of a stage as a whole instead of talking about 60 separate items.

The second finding was that of cumulativity of comprehension scores for a subject—that is, if a subject showed high comprehension of a given stage, he showed high comprehension of all the preceding stages.

Our third finding was that of a close relation of comprehension scores to the subject's own spontaneous stage of judgment in the pretest. Our hypothesis was that comprehension scores should be high up to the subject's predominant test stage and then progressively decreased. This was found to be the case. Up to the subject's own predominant stage, average comprehension scores were high; then they began to fall increasingly as the statements were higher than the subject's level.

Our fourth finding was that the highest stages used on the pretest, rather than the predominant stage, was the best predictor of comprehension. On the pretest, the spontaneous utterances of a subject were coded into stage categories, and the stage which had the predominant number of codes was called the subject's "own stage" or his pretest "predominant stage." All the subject's responses are not scored at only one stage, however, and his use of stages higher than his own stage is of particular interest. Almost all of the subjects who showed on the pretest a substantial amount of codes at stages above their predominant stage also showed comprehension of statements above their predominant stage, whereas if a subject did not show substantial use of stages higher than his predominant stage there was only 30 percent probability of his comprehending statements higher than his predominant stage.

Preference

There were two major preference findings. The first supported our hypothesis that insofar as subjects comprehend various stages of thinking, they tend to prefer the highest comprehended. Thus, the preference hypothesis was confirmed in regard to preference comparisons among comprehended stages. It is notable that the subject's own predominant stage on the pretest did not predict his preference; that there was no special in-

vestment in one's own predominant stage.

The second preference finding concerns preference among all statements whether the subject comprehended it or not. The finding was that virtually all subjects tended to prefer the highest stage statements in their developmental order.

The significance of the preference trends are only partially clear. If a subject gives evidence of understanding statements in their stage-distinctive way, it is reasonable to interpret preference for one statement over another as that the subject is judging one stage's thinking as more adequate than the other. By this interpretation, this study supports the claim that subjects reject their "old," too simplistic ways of thinking. But if a subject gives no evidence of understanding a statement in its intended stage-distinctive way, it is problematic to make inferences about how the subject is judging the intended stage's structural adequacy. There are insufficient grounds in this analysis, for instance, to conclude that subjects are choosing Stage 6 statements for their Stage 6 reasons. Nevertheless it has been demonstrated that the trend of increasing preference is counter to the ease of comprehension—i.e., the increasing difficulty of statements does not make them less preferable. Also it seems safe to say that subjects reject the statements of stages that they have themselves already passed through.

The study's finding of a cumulative order of difficulty supports the claim that each succeeding stage is more cognitively differentiated and integrated than the preceding one, and its finding of an order of preference is consistent with the claim that each succeeding stage is more conceptually adequate. The increasing difficulty of the stages sets upper limits on what kinds of moral judgments are conceptually possible for a subject, and preference for greater structural adequacy sets lower limits on what kinds of moral judgments the subject would be satisfied with. Thus the two factors—comprehension and preference—largely account for the developmental stage at which a subject is actually producing moral judgments and for the stage of judgment presented to him which he will assimilate.

The trends for ordered preference of higher stages which are not comprehended is ambiguous. One hypothesis about why subjects prefer uncomprehended high-stage statements is that subjects may not understand the statements, but the complexity and abstractness of the statements make them sufficiently ambiguous so that subjects may "project" some of their own ideas into the statements but see them expressed in words which are difficult to challenge or refute. Some subjects said that they liked the Stage 6 statements because that's what they said (although they were scored as neither using nor comprehending Stage 6). This suggests the interpretation that the subjects sensed an order of abstractness and complexity without understanding the abstract ideas themselves, and felt an abstract answer was more appropriate to the test-taking situation.

A rival hypothesis of this preference finding is that subjects really do understand Stage 6 thinking, but only intuitively and faintly and cannot express it or give evidence of understanding it by our test of comprehension. This hypothesis derives from the view that even at early stages of development children are discriminating about the character of even the higher forms of justice. Some support for this hypothesis comes from the fact that in the five ranking trials, subjects were

fairly consistently choosing the Stage 6 statements and so they were discriminating something in the Stage 6 statements.

From a cognitive developmental view, the task of spontaneous production, comprehension, and preference can be seen as "developmental decalage." According to this view, it is understandable why subjects should show comprehension of higher stages than that they predominantly use in the pretest. In the prestest, the subject has to make a construction of a situation "from scratch"—identify the relevant features, imagine the consequences of various courses of action, and integrate all of these considerations into a coherent justification of one course of action. The task of comprehending a prototypic statement is easier. All of this structuring has already been done. All the subject has to do is to follow the points that the statement is making, and discuss them in an equivalent form. And so it is plausible that there will be some subjects who show some evidence of high level thinking spontaneously on the pretest, but who are not quite able to put a solution together at that high level by themselves without the help of the statements as models. When such a subject sees a solution in the statements he might then be able to follow the ideas after the statements have "spelled it out" for him.

Similarly, the preference task may be viewed as an even easier way of manifesting discrimination of high levels of thinking. In the preference task, not even the production of equivalent ideas is required. Therefore, one could view the preference task as furnishing the earliest signs of the acquisition of new stages of thinking, and could see three tasks (preference, comprehension, and spontaneous production) as manifesting the acquisition of new stages of thinking at different points of consolidation.

Such an interpretation is different from other theoretical orientations which view preference or value judgments as a function of reinforcements, modeling, or libido, and not as a function of cognitive complexity and developmental stage. This study has not just assumed that cognitive capacity is the crucial variable in spontaneous productions or stated preferences for arguments, but has demonstrated meaningful relationships among the three, and thus supported these predictions from cognitive-developmental theory.

Condensed with permission from the *Journal of Personality*, 41(1):86–109, 1973. Copyright 1973 by Duke University Press. Reprints of original article from James R. Rest, Ph.D., 330 Burton Hall, Department of Psychological Foundations, University of Minnesota, Minneapolis, Minn. 55455

A Legal Look at Prosocial Behavior: What Can Happen for Failing to Help or Trying to Help Someone

John Kaplan

You are sitting on a pier eating a sandwich and watching the sunset when the fisherman next to you leans too far forward and falls in. He screams to you, "Help! I can't swim. Throw me a life preserver." You make no effort to get up to throw the life preserver hanging only 5 feet from you even though you could do this with absolutely no danger to yourself and only the most minimal effort. Indeed you eat your sandwich and now, along with the sunset, you watch the fisherman drown.

Under the law of essentially every Anglo-American jurisdiction, you are guilty of no tort making you civilly liable to the family of the fisherman you permitted to drown, nor would you be criminally liable in any way for his death.

Neither our tort nor our criminal law are concerned with the good that one doesn't do; they merely forbid doing harm. The law does not do awfully well in the United States when it tries to prevent people from harming each other or from harming themselves. It is arguable, then, that the law shows a wise economy in avoiding the temptation to try to force people to be good to each other.

Most commentators and courts, however, have based the well-known principles against liability for omissions to two principles:

First is the principle of individualism, a principle which looks at the event from the point of view of the defendant and his right to be let alone. It regards the fisherman's falling into the water as an imposition upon the freedom of those around him and asks why should the law permit the careless fisherman to impose legal duties on others and to interfere with their freedom.

The second principle is the "why me" principle and focuses on the enormous difficulty of drawing standards. Let us say that the fisherman had drowned in an ocean surf in full view of several thousand people. Any one who could have saved him with no danger to himself could, if the legal duty were recognized, be prosecuted. Since it would be beyond the scope of any prosecutor's resources to prosecute all, he would have no choice but to pick out just a few; they might very well be able to claim "why me" and not all the other people. The problem of standards in determing which person to prosecute and which person to convict is so difficult that the courts have shied away from the whole area, bolstering their view with the arguments in favor of individualism.

Where we have a sufficient answer to the "why me" argument, we impose liability for failure to behave in prosocial ways. If you stand in some particular relationship with the victim—a contractual or kinship position of responsibility, for example—you do have a duty to save him and can be held criminally liable if you do not. A somewhat different way of satisfactorily answering the "why me" question arises when you are in some causal sense responsible for the accident. For instance, if the fisherman had tripped over you and fallen into the water, even if only his clumsiness were to blame, you might still have the duty to save him. Note that this is true even if no responsibility could possibly be attributed to you for the actual action

that caused the death.

What would have happened if you threw a life preserver in the fisherman's direction but cast it so incompetently that he was unable to reach it before he drowned? The "why me" question could be answered, "Because you undertook to save him." Most courts would hold that this was not enough, on the theory that no harm had been done to the fisherman by the incompetent cast inasmuch as he would have drowned equally had there been no cast at all.

On the other hand, courts are unanimous in imposing liability where some argument can be made that your bungled attempt to help the fisherman placed him in an even worse position than he was before you made the attempt.

The Good Samaritan Statute

There is one situation which in the law on prosocial behavior has received considerable discussion. The typical case cited as an example of unfairness of the law is that of a physician driving past an automobile accident. Though he could with no legal liability, drive right by, he stops and renders medical attention. Unfortunately, he does so negligently and, by making the victim's condition worse, causes himself to become liable.

The physician feels that it is unfair to apply the ordinary rules of negligence in such a case and that if he does in good faith try to help he should not be sued. Moreover, it is not so much the case where he is negligent and is sued that the physician finds disturbing. Rather he is most upset by the case where he is not negligent but is sued anyway. Perhaps even more important to him if he is sued is the fact that he may have to suffer the insults of bad publicity, loss of status, and a possible increase in his malpratice insurance rates.

As a result, medical associations have lobbied, often successfully, for "Good Samaritan" statutes which shield physicians from liability for their ordinary negligence when they voluntarily stop at emergencies. Another solution to problems inherent in voluntary emergency medical services would be a social insurance scheme to pay the physician the fair value of his emergency services, while he remained liable to the emergency victim just as he would be to his own patients. This solution would avoid a major objection to Good Samaritan statues—that in essence they provide a subsidy to physicians by releasing them from a liability which is imposed on all other citizens.

Probably the most interesting aspect of the Good Samaritan statute is that so far as we know there has never been a reported appellate case where a physician has been successfully sued in the situation contemplated by the Good Samaritan laws. But such laws have swept the nation as one State after another has yielded to the entreaties of its medical society; indeed, some have even broadened the law to afford Good Samaritan protection to nurses.

Enforced Helping

It is possible, however, that having raised the issue, the physician may very well in the long run come to regret it. Other countries apart from the Anglo-American tradition do sometimes impose liability for failure to perform prosocial actions which might save lives. And there the parade of horrible examples that we can imagine has not eventuated—perhaps because of the wise use of prosecutorial discretion. It might be that this type of experience will lead to a further broadening of our laws on the issue and, if

it does, one of the most obvious candidates for the imposition of a duty to aid those in distress will be the physician. Unfortunately, the problem would remain that the law would probably be unenforceable except on the most hit-or-miss basis. Perhaps the advantages of increased prosocial behavior which might result from a legal requirement would not be worth the cost in unfair prosecution which a change in the law might bring.

Impetus for Prosocial Behavior

It is in the tort law of rescue that we see the little which has been done to encourage this kind of prosocial behavior.

You are sitting beside a road when a hiker walking along the road fails to notice a car bearing down on him. You have no duty even to shout a warning. Let us say, however, that either the hiker is deaf or that there is not time to warn him so that all you can do if you wish to save him is push him out of the car's path. If you do attempt to push him out of the way and are struck by the automobile, the courts today will hold the driver liable to you for your injuries, if he was driving negligently. At one time the view was that inasmuch as you had risked your life without having any duty to do so, the rescue attempt was your sole responsibility and you therefore could not collect for your injury from the driver, even if the hiker could have collected. The modern rule, however, is that "danger invites rescue" and that the driver's act of endangering the hiker was also a threat to those around who might attempt to rescue the hiker. Regardless of the reason, however, the fact is clear that if you, the rescuer, are injured because the driver was negligent, the fact that you were a voluntary actor will not bar you from recovering damages.

If the hiker was negligent and if you are injured in trying to save him, you may very well be compensated by the hiker for your injuries. The theory is that his negligence with respect to his own life is also negligent with respect to that of anyone who might attempt to save him.

Note how minimal is this encouragement of prosocial behavior. If neither the driver nor the hiker is negligent, you do not get compensated, or if the one who is negligent is without funds or insurance, the most you get is thanks. And if your rescue attempt was foolhardy, then you cannot collect even from one who was both negligent and solvent.

This then is the encouragement the law provides to prosocial behavior. It is of course inadequate, but so long as our financial reward to one individual must come in the form of a penalty to another, we must not expect too much. Hopefully when we learn more about how to structure reward systems to induce desired behavior, we will devote more legal attention to this issue. Until then, with the legal tools at our disposal, it seems that neither the carrot nor the stick of the law is a very effective tool for the stimulation of prosocial behavior. Indeed if it were, most of the reasons why we consider behavior prosocial might arguably be lessened. If an individual rescues someone in distress because of legal pressure or inducement, is the act any more prosocial than holding down a job, driving carefully, or a host of other things we do—for our own selfish—rather than prosocial—reasons?

Condensed with permission from the *Journal of Social Issues*, 28(3):151–161, 1973. Copyright 1972 by the Society for the Psychological Study of Social Issues. Reprints of original article from John Kaplan, LL.B., Professor of Law, Stanford University, Stanford, Calif. 94305

Competence and Helping

Mary B. Harris and Lily C. Huang

The fact that people who perceive themselves as more competent are more likely to be helpful has often been documented but the reasons for the effect of competence on helping are not yet known. One explanation is that competence reduces the "cost" of helpful behavior to the subject. A second explanation is that competence increases happiness and that the "warm glow of success" leads to greater helping. A third explanation is that competence means that people see themselves as more responsible for helping others.

This study attempted to replicate the competence effect and to investigate the alternative interpretations of it. Subjects were 23 male and 23 female students in an introductory psychology course.

Competence manipulation phase—Subjects were told that the experiment was designed to help gather information on a "Visual Creativity" test. The test was divided into two parts: a Block Design part, in which subjects created designs out of colored wooden blocks of various shapes, and a Picture Sensitivity test, in which they were to interpret and write down impressions of five abstract pictures. In the Block Design, the responses were scored on a complex data sheet, involving ratings on 10 dimensions ranging from "figure balancing" to "scheme abstraction," in an effect to make the manipulation convincing.

In the Picture Sensitivity subtest the scoring sheet involved ratings of the five interpretations on dimensions ranging from "color sensitivity" to "figure ground relationship," to make the scoring convincing.

The scores were different according to the treatments. Subjects in the Competence-No Explanation, Competence-Easy, Competence-Happy, and Competence-Responsibility treatment groups received scores from 7 to 9; subjects in the Low Competence group received scores ranging from 2 to 4; and subjects in the No Information group had random scores written in, which they never saw. Each subtest was "scored" in such a fashion that it was easy for the subject to see the numbers that the experimenter was writing, except for the subjects in the No Information group who could not see the scores.

Subjects were also given different comments. Subjects in the four Competence groups were told in a surprised tone of voice that although only a few hundred people had been tested so far, their scores were among the highest yet seen. Subjects in the No Information group were told nothing. Each subject in the Low Competence group was told in a rather embarrassed fashion that his score was among the lowest of the students tested so far.

Helping behavior measurement phase—All subjects were thanked for their participation and told that they were free to go. Then, as an afterthought, the experimenter mentioned the work she had been doing while subject was taking the test. She pointed to a pile of approximately 300 pieces of cardboard with different colors and code numbers and said: "I am writing all the possible creative color names for these color sticks for a color sensitivity test we are developing. I wonder if you could help me write some of the color names? You could spend as much or as little time as you could spare." Nothing further was said to

subjects in the Competence-No Explanation, No Information, or Low Competence groups. Subjects in the Competence-Easy group were told: "Since you are so creative, this work must be easy for you," those in the Competence-Happy group were told: "Since you are so creative, you must enjoy this work," and those in the Competence-Responsibility group were told: "Since you are so creative, you 'owe' everybody your creativity in doing it." If the subject stayed to help, the time spent on helping and the number of names written were recorded.

As the subject was about to leave, he was given a 10-item questionnaire, asking whether he liked the experiment; whether he considered his visual creativity above average; whether he considered himself a happy, successful, responsible person; if he helped (for those who helped only) because he liked doing it, thought it was easy, or felt he ought to do it; and for every subject whether he would like to participate in a similar experiment; and whether he could describe the purpose of the study.

Helping

Three different measures of helping clearly showed that subjects who were led to feel competent at a task were more likely to help with a similar task than those who were not led to feel competent. Moreover, subjects who helped rate themselves as more visually creative and tended to see themselves as more successful than subjects who did not help. However, subjects in the Competence-No Explanation group were not significantly more helpful than subjects in the No Information or Low Competence groups, probably because of the small number of subjects involved, since the trends were in the predicted direction.

The Competence-Easy group, which was told that being competent should reduce the cost of helping, was significantly more helpful than all other groups, indicating that this rationale appeared to be the one that best explains why competence leads to helping. However, few subjects gave ease of performing the task as their reason for helping, which suggests the discrepancy between what affected a person's behavior and what he perceived as the motivation for that behavior.

It appears that being given any kind of explanation as to why subjects who feel competent ought to help seems to increase a person's likelihood of helping. This could either be due to the fact that the explanation makes the relationship between competence and helping clearer and more salient to him, or it could occur because experimenter's brief statement is seen by subject as increasing the demand characteristics of the experiment.

Males and females did not differ in the duration of helping, yet they differed in the number of items produced. Moreover, in terms of the magnitude of helping, male and female subjects reacted differently; males wrote more items than females in the Competence-Easy group and fewer items in the Low Competence group. Males seemed to be more cost-oriented, more sensitive to the negative competence manipulation, and more efficient than females in producing more items in the same duration.

This study also revealed the value of using multiple measures of helping behavior.

Condensed with permission from the *Journal of Social Psychology*, 89 (Second Half): 203–210, 1973. Copyright 1973 by The Journal Press. Reprints of original article from Mary B. Harris, Ph.D., Department of Educational Foundations, The University of New Mexico, Albuquerque, N. Mex. 87106

Organization of Early Skilled Action

Jerome S. Bruner

Competence is a term that covers a wide range of skills and their appropriate deployment. For convenience, the forms of competence in infancy and early childhood can be divided into those which regulate interaction with other members of the species and those involved in mastery over objects, tools, spatially and temporally ordered sequences of events. Here we shall be concerned principally with the early acquisition of skills relating to the manipulation of things, though the role of certain social skills will be treated in the interest of explicating that topic. We do well to bear in mind that the growth of manipulatory skill is not only a classic topic in developmental psychology, but is also a key issue in the study of the evolution of the hominids and emergence of the man.

In the growth of such competence in infants, three themes are central—intention, feedback, and the patterns of action that mediate between them.

We shall concentrate principally upon infants during the first year of life. The competencies achieved during the first year can be divided into five broad enterprises: feeding, perceiving or attending, manipulating the world, locomoting, and interacting with members of the species. Another state has to do with control of internal state, and this may be a sphere different from the others. In each enterprise, the infant comes early to solve problems of high complexity and does so on the basis of encounters with the environment that are too few in number, too unrepresentative, or too erratic in consequence to be accounted for either on the basis of concept attainment or by the shaping effects of reinforcement. The role of learning in the conventional sense is not clear. Indeed, what is striking about the opening year of life is how specialized and circumscribed the role of learning turns out to be.

We begin with the initial arousal of an intention in the infant by an appropriate object. Intention as used here involves an internal discharge in the nervous system whereby an act about to occur is not only produced in the effectors by the usual motor volley but is also signaled to related sensory and coordination systems.

It can be argued that the capacity for all measurable features of intention is present from birth and that the patterned behavior that initially occurs "reflexly" or "instinctually" is, by virtue of these capacities, converted into intentional action when the infant has had an opportunity to observe the results of his own acts.

The characteristic initial accompaniment of aroused intention in the infant is prolonged orienting accompanied by triggering of anticipatory consummatory activity. Objects or states that arouse such intentionality operate like triggers or releasers, more like threshold phenomena than like reflexes in which stimulus magnitude determines response magnitude.

Initial arousal is often followed by a loosely ordered sequence of constituent acts that will later occur in an appropriate serial order to achieve the end state toward which the intention appears to be steering. The development of visually guided reaching is typical of this pattern. An appropriate free-standing object first produces prolonged looking. Next there is action of the mouth and tongue and jaws, then

antigravitational activity of arms and shoulders, clenching of fists in a "grab" pattern, movement of arms, ballistic flinging of clenched fist, etc.

These acts or subroutines are aroused, but they do not yet occur in the correct order for successful object capture. Yet it can be shown that, in a diffuse way, each of the components is adapted to the goal although there has been no feedback from the effectors during the consummatory act (which has not occurred) nor can there be said to be "knowledge of results" (for the same reason).

In time, and probably by virtue of sheer practice in the presence of the releasing stimulus, the act is successfully executed. An object is captured and brought to the mouth. Doubtless some of this progress depends on maturation of the nervous system, but practice is crucial. It is this practice that makes possible the development of appropriate synchrony between feed-forward corollary discharges and feedback from the effectors.

It is often difficult to distinguish between constituents and the larger-scale acts into which they are combined in carrying out a skilled act. For often a highly practiced complex skill becomes the constituent for a still more comprehensive skilled performance: walking, which is a complex serial structuring of component acts, very soon becomes so automatic as to fit easily into a variety of higher-order acts.

Here we come to a puzzle. Once the act is successfully executed and repeated with success, there often appears a sharp alteration in the structure of the act used for achieving an intended outcome. For example, shortly after the first successful taking of an object, the fist, rather than being closed prematurely which often happens before successful capture, now remains open at maximum extension until the object being sought is touched. There appears to be a reorganization of components, with a substitution of hyper-extension ended by contact with the object for the previous routine of closure that begins with the extension of the arm. A constituent is drastically altered to fit the task requirements, in this case the alteration being in direct contrast to the act replaced.

At this point the effects of reinforcement seem to take over, producing a modification of the action pattern. Its effects are threehold: The first effect is to increase the anticipatory patterning of the act: For example, the hand now begins to close gradually to the shape of the object as it approaches rather than after it gets there. The second effect is modularization: the act becomes less variable in latency and in execution time and more economical in expenditure of energy. The third and puzzling effect is that the act is soon supplanted by a new pattern of action which may in fact include the previously mastered act as a component part. Thus, in place of the by now well-modularized bilateral pounce reach, the infant now 6 or 7 months old reaches in two steps: the first extends the hands out to the plane of the object, and the second closes in with the familiar anticipatory hand-closure pattern. The old program does not "disappear"; under stress, with overload, in unfamiliar surroundings, it appears intact—as also when the more complex act fails of attainment.

Again, reinforcement operates to modularize this newest pattern. But, what leads to the emergence of particular higher-order action programs is a puzzle. They are not selected by a process of reinforcement from a "lexicon" of random or near-random response elements. The new pattern

emerges with an adaptive, serially ordered structure that reflects some internal principle of organization that is triggered by the environment. The puzzle has an analog in linguistic development, where the child goes from one level of syntactic complexity to a higher one with no "in-between" at all. Practice is necessary, but not in a specific sense of successful practice with reinforcement selecting constituents or rules.

My speculation about what makes possible these quantum jumps in performance is very much in line with information-processing theories of development. Modularization frees available information-processing capacity for further use in task analysis, for constituent subroutines require less attention. The reduction in attention is accomplished when coordination is achieved between internal feedback, peripheral feedback, and knowledge of results. Given modularization and the reduction in attention necessary to regulate an act, that act can then be incorporated into a higher-order, longer-sequence act without requiring so much attention as to disrupt regulation of the higher-order act.

What about the further "task analysis" that is made possible by more available information-processing capacity? As the child develops, his general skill in task analysis improves markedly, as attested to by the increasing appropriateness of his initial efforts at dealing with new tasks. We know little about such activity, although studies of problem-solving behavior provide interesting leads concerning the combinatory nature of hypothesis in problem solving—whether involving external objects used in a task or internal thought elements.

Goal-directed, skilled action, then, may be conceived of as the construction of serially ordered constituent acts whose performance is modified toward less variability, more anticipation, and greater economy by benefit of feedforward, feedback, and knowledge of results. The "stock" of constituents from which such performances are constructed is in no sense (save perhaps initially) to be thought of as made up of fixed action patterns in the ethological sense. Or is it something in the form of a fixed lexicon from which elements are drawn for use by a sentence generator. Like speech gestures, gestural components of a skilled motor act are generated intentionally to meet a specification. And like articulatory acts in speech they are within anatomical limits capable of continuous variation in various attributes. But in both instances, the continuous domain is rendered discontinuous. Not all positions are used for vowel production and not all positions of the hand are used in manipulating. In both cases, articulation and skilled manual action, there is enormous variation in execution, either to take into account the starting position of the articulatory mechanism or other "local conditions," or to take account of the requirements imposed by the task at hand in manipulation.

In the case of component gestures of the manipulatory system, there are preferred positions and criteria of utility with respect to object handling. These are what make the initial stock of "building blocks" from which acts of manipulation are constructed. And like the distinctive features of speech, they vary from their ideal form to fit the requirements of an ongoing task.

Speech is more idealized or standardized than skilled action. It is not that the intention to transmit a given message is any more precisely defined than the intention to produce a given effect by one's motor action. The difference comes, rather, from the requirement

of communication, of sharing with another human being, using a common code. When an activity must be demonstrated to another, it becomes standardized or idealized. Both speech activity and skilled manipulatory activity involve the construction of behavior rather than the acquisition of responses. But one is constrained by the nature of a shared code that is idealized in order to reduce ambiguity.

Not until we consider early play can we understand more how the child achieves his growing competence. There is, of course, much problem solving in the first year, episodes where an intention is held invariant while the means used to attain its objective are varied. But there is also much behavior that seems to be without clear-cut means-end structure, where the activity seems more playful, where ends are changed to fit available means, and means and ends become admixed.

The exercise of type of play is crucial for development during the first year or year and a half. It might best be called mastery play, and its form is playful means-end matching. It consists of extending to new limits already achieved skills. Several examples drawn from our studies will illustrate what appear to be pleasure-giving variations of newly acquired routines. The 6-month-old infant, having learned to hold on to an object and get it easily to his mouth, then begins a program of variation. When he takes the object, he holds it to look at, he shakes it, he bangs it on his high chair, he drops it over the edge, and before long he manages to fit the object into every activity into which it can be put. Inversely, when the young infant masters a new step in sensory-motor development, as in simultaneous use of power and precision grips so that he can hold an object steady in one hand while exploring it with the fingers of the other, he very soon uses this new act on any object that has a "loose end" or "pick-at-able" property. In the first case, a new object is fitted into as many routines as available; in the second, a newly mastered act is addressed to as many different objects as available. Both are absorbing work (or play) for the child.

Play, then, has the effect of maturing some modular routines for later incorporation in more encompassing programs of action. It also seems to "trial run" a range of possible routines for employing already established subroutines. Not all forms of activity need such exercise, but whenever action involves the serial application of constituents to external stimuli with the objective of altering a state of the world, then exercise is needed. For exercise to be highly flexible, play must precede it.

I shall speculate that the more productive the programs of action of the adult of the species, the greater the likelihood of mastery play earlier on in development in that species, with higher primates and man being at the top of the scale.

The human infant is helpless and reliant upon caretaking by a mother or somebody in that role. There is an enormous reliance upon adequate social relationships if the child is to get on with the kind of skill development we have been considering, and I would like to concentrate briefly upon an aspect of competence that is peculiarly social—"modeling."

Modeling is a powerful means for transmitting highly patterned behavior. The widespead occurrence of "adult-watching" among young primates is a pattern in which the observation of adult behavior is followed by the incorporation of observed patterns into play among the young. In order

to do such observational "learning" the child must construct complex behavior to match the sample. A major accomplishment of the kind of initial skill learning we have been discussing is precisely that it provides the means for the young to enter such observation-play activity. Note as well in the young that the "imitation" of adult patterns takes place not directly but through incorporation in play.

Two closely related points—one practical, the other theoretical—will serve to conclude the discussion. There is inherent in the description given of the growth of infant skill an emphasis on self-initiated, intentional behavior. Surely, the chief practical recommendation one would have to make on the basis of what has been said thus far is that the infant should be encouraged to venture (or at least not discouraged), rewarded for venturing his own acts, and sustained against distraction or premature interferences in carrying them out. It is a point of view very alien from such ideas as preventing "deprivation" or providing "enrichment," both of which are highly passive conceptions. From a practical and theoretical point of view, the controlling motif of skill acquisition as presented here is "opportunity to initiate and sustain action" in play and in carrying out intentions, with the further opportunity this provides for coordinating feedforward, feedback, and knowledge of results.

We would do well, now, to examine by experimental means not only the factors that affect the kind of skill acquisition that has concerned us but also the social ecology that sustains or impedes it. For it may well be that we have failed fully to appreciate the nature and importance of environments that are both supportive and challenging. The theoretical conclusion to which we must come is that a great deal of the orderliness in early skilled behavior comes from internal biological sources and is, so to speak, shaped but not constructed by the environment. The first orderly, skilled behavior is virtually "released" by appropriate objects in the environment, presented under appropriate conditions of arousal. A close examination of skill acquisition following this initial, preadapted stage suggests that a capacity for the appropriate construction of skilled action, designed to achieve intended ends, is operative. Skilled acts are constructed by the serial deployment of constituent subroutines. The role of learning in the classical sense is to shape and correct these constructions to meet the idiosyncratic nature of particular instances of tasks encountered. Much of the task of "learning" to put constituent acts together for the appropriate attainment of intended objectives occurs in play where there is no reinforcement for the sorts of sequences that will later appear in skilled behavior.

The study of skill acquisition must take into account the serial structure of acts, the extent to which they achieve intended results in the light of local conditions, and how they are modified when they do not. It is this process that underlies the growth of competence in the infant as well as in the adult.

Condensed with permission from *Child Development*, 44(1):1–11, 1973. Copyright 1973 by the Society for Research in Child Development, Inc. Reprints of original article from Jerome S. Bruner, Ph.D., Department of Experimental Psychology, University of Oxford, South Parks Road, Oxford, England.

High School Students as Mental Health Aides in the Elementary School Setting

Spencer A. McWilliams and Norman J. Finkel

The increasing use of nonprofessionals in helping roles reflects both shortages in mental health manpower and increasing demands for human service. Service needs are particularly acute for elementary school children. In like manner, problems such as underachievement, poor motivation, and lack of interest among high school students have caused concern among educators and parents. This project was motivated by a search for converging social resolutions of problems of the "tuned-out" high school student and the need for helping services for elementary school children.

The program involves selected high school students who were trained as mental health aides and who worked with primary grade children referred for school maladaptation problems.

Aide selection and training—Prospective aides were identified with the help of guidance personnel. They were asked to refer students who were underachieving, lacking interest in school, or poorly motivated, but who might benefit from participation in a human service program. Approximately 25 students were referred at each school. All candidates met initially with one of us, their trainer-consultant, in a group meeting where the program was described. Interested students were then interviewed, individually, and 15 were selected (14 females, 1 male; 7 in District A, 8 in District B). Of the 15, 1 was a sophomore, 5 were juniors, and 9 were seniors.

Participants met with the trainer-consultant once a week for 6–8 training sessions during which discussion focused on psychological adjustment, children's problems and feelings, and activities which the aides might employ. Throughout training, theoretical emphasis was placed on aides developing warm and accepting relations with the children, and they were encouraged to try to understand and reflect children's feelings. Within this framework, aides were encouraged to develop their own style of relating to the children and use the discussion topics as stimuli for further self-development. A second purpose was to establish an atmosphere of group cohesiveness where aides could feel free to express and explore their anxieties about working with children as well as their own problems.

The aides were next introduced into the elementary schools, where they observed in the classroom and later began to meet with the primary grade target children. As this shift occurred, the focus of the weekly meetings changed from training to consultation-supervision. Consultants encouraged aides to explore their feelings about the children and explanations of their behavior. Discussion often centered around specific children, their problems, and directions to take with them. More withdrawn children, for example, were encouraged to express themselves through word games, while children with poor self concepts were reinforced for success in craft activities. Additionally, aides concentrated on rapport-building conversation with children who were anxious with a strange adult. Group involvement in discussions was encouraged, and aides often suggested techniques and activities to their peers. A second focus was more personal; it included topics such as the nature of the ongoing interac-

tion within the aide group and aides' feelings about school, their work, and their future.

Child selection.—Target children were referred by teachers in the elementary schools. Kindergartners and first and third graders were seen in District A, first and second graders in District B. Teachers were encouraged to refer children who were shy, withdrawn, undersocialized, immature, and underachieving, rather than children with severe acting-out problems. In all, 50 children were referred; 23 were seen by aides, the remaining 27 served as a control group. In District A, children (n-7) were seen individually by aides twice a week. In District B, aides saw two children together (n-16) once a week. Sessions started in February or March 1971 and continued through the academic year.

Description of aide-child contacts—Contact sessions lasted from 25 to 30 minutes and occurred during aides' study halls or free periods. In addition to relation-building activities such as conversation, walking, etc., activities during sessions included drawing, painting, crafts, indoor and outdoor games, and reading. In District A, children were seen for about 10 weeks, an average of 20 sessions per child, while District B aides averaged 12 weekly contacts.

Evaluation Instruments

Teacher ratings of children—Teacher's ratings of children's behavior were assessed with the AML Behavior Rating Scale which consists of 11 (negative) behavior-rating scales—5 on an acting-out dimension, 5 on a moodiness dimension, and 1 a learning-disability item. The teacher rates the frequency of each behavior on a 5-point scale, from "all of the time" to "never." In addition to 11 individual item scores, sum scores for acting-out behavior, moodiness, and overall behavior (maladjustment) rating are derived.

Aides' ratings of children—Aides rated change in children's behavior on the Child Behavior Change Scale, a measure that includes seven positive and seven negative behaviors, and three overall change scales. Ratings are made on 7-point scales, from "much more frequently" through "no change" to "much less frequently." A category for "never acts this way" or "does not apply" is provided also.

Aides' self-rating—Aides rated their perception of the program on 7-point rating scales: effect of participation on their understanding of children, self-understanding, attitude toward school, and plans for the future; comparison with other school activities; and their wish to participate in the program in the future.

Evaluation Procedure

The AML Behavior Rating Scale was administered as a pretest to 50 children at the beginning of the program. From this pool, 23 experimental children (seen by aides) and 27 controls were selected. No significant differences were found between experimentals and controls on any of the 11 items or the sum scores. At the end of the school year, teachers again completed the scale for the 50 children.

Aides completed the Child Behavior Change Scale at the end of the school year for the 23 children they had seen and completed the aide questionnaire; 12 aides completed the questionnaire.

AML Behavior Rating Scale Change

AML Behavior Rating Scale change scores were derived by subtracting the posttest from the pretest scores on each item and sum scores and adding a constant to eliminate negative signs. Experimentals improved significantly

more than controls on the "Is unhappy or depressed" item as well as the sum acting-out behavior and overall sum behavior rating.

Child Behavior Change Scale Scores

Child Behavior Change Scale scores were derived by substracting actual ratings for each adjective from the "no-change" point. Aides perceived children as becoming significantly more warm, trusting, friendly, and attentive as well as less withdrawn, sad, and frightened. Additionally, they rated children as significantly improved in terms of behavioral, educational, and overall change..

Aide Self-Ratings

Scores on the aide questionnaire were derived by subtracting actual ratings for each item from the neutral anchor point. Aides indicated that participation in the program significantly improved their understanding of children, perceived the program as being significantly better than other school activities, and would wish to participate in the program again.

Teachers' ratings indicate that the target primary grade children benefited from participation in the program. Although they may have been biased by their knowledge of which children were seen by aides, they perceived the children as becoming happier, less of a behavior problem, and improved, in comparison to control children. Aides' impressions of children's behavior change support the notion that the program helped children, both in terms of the way they related to aides and their personal happiness in school.

This evidence of program effectiveness is complemented by positive reactions of the elementary school personnel to the program. Teachers, principals, and parents expressed support for the program and saw it as helpful to the children. A more objective indication of program acceptance by the participating schools is found in their planning to continue and expand the program.

Although the program did not solve all the problems of the "tuned-out" high school student, aides perceived positive gains from participation and saw the program as preferable to other school activities. This finding lends support to the notion that the high school experience can be made more functional and rewarding, even for under-achieving adolescents, by their engagement in human-service activities which they can perceive as relevant.

Several limitations of the project can be cited: Aides worked with children for only a small portion of the year, and the sample of both aides and children was small. The presence of only one male aide was unfortunate and undoubtedly reflected the biases of counselors and students toward perceiving work with children as a female role. Nevertheless, the study indicates the feasibility of training students, who themselves have problems, to help younger children and shows that such aides can have a beneficial effect on primary graders experiencing school maladaptation. As such, it provides an example of the possibility of developing converging, mutually supportive resolutions to complex and difficult social problems.

Condensed with permission from the *Journal of Consulting and Clinical Psychology*, 40(1):39–42, 1973. Copyright 1973 by the American Psychological Association, Inc. Reprints of original article from Spencer A. McWilliams, Ph.D., Department of Psychology, University of Arizona, Tucson, Ariz. 85721

Clients', Therapists', and Judges' Evaluation of Psychotherapy

David Horenstein, B. Kent Houston, and David S. Holmes

A basic question regarding psychotherapy practice and research is: Should the client's or the therapist's judgment be used to determine the effectiveness of psychotherapy? In the past it was often assumed that the therapist was in the better position to evaluate therapeutic progress. This stemmed from the belief that the therapist was the "expert" and that the client's judgment was distorted by "flights into health," "transference cures," and the "hello-goodby" effect.

An equally strong argument can be made that clients are better evaluators than are the therapists. Although the therapist may be the expert, in most cases the discomfort which motivates the client to seek therapy is subjective, and therefore the client is in the best position to evaluate changes. Furthermore, the therapist is not immune to biasing influences as his need or desire to see improvement may influence his judgment.

In this investigation, therapeutic progress was assessed by clients, therapists, and two independent judges. An attempt also was made to determine the reason(s) for differences in judgments of therapeutic progress.

Clients, Therapists, and Psychological Clinic

The 41 clients who participated voluntarily sought aid at a psychological clinic operated by a psychology department for training and research; services are provided without charge. The client population is heterogeneous and is probably similar to that found in many "walk-in" clinics. The clients participated in either individual (n-25) or group (n-16) therapy, and the mean numbers of sessions in the two types of therapy were 6.5 and 3.1, respectively. Individual sessions lasted 50 minutes, while group sessions lasted 90 minutes. The 17 therapists who saw the clients were advanced graduate students in the psychology department's clinical program. All therapists worked under the supervision of experienced clinical psychologists and social workers. The orientation of the therapists and supervisors could best be described as "eclectic."

Prior to his first session, each client completed the Client Assessment Questionnaire, Form 1. The cover sheet indicated that the form was a technique for "gathering information to increase our effectiveness in dealing with psychological problems .... Since you know yourself and your situation best, we would like you to fill out this questionnaire as thoroughly and honestly as possible."

The questionnaire contained 10 questions, each related to a different problem area. The areas were: physical complaints, financial status, family life, school, work, relationships with members of the same sex, relationships with members of the opposite sex, future plans, self-perception, and drug and alcohol usage. The first part of each question asked the client to rate the severity of his problems on a 7-point scale. The second part asked the clients to "list and explain the specific behaviors or problems" they had in that area. During each client's last therapy session or his last session before the end of the study period, the client completed the Client Assessment Questionnaire, Form 2. The cover sheet indicated that "We would like you to consider your *present* situa-

tion and fill out the following questionnaire as thoroughly and honestly as possible." The instructions and questionnaire items were identical to those on Form 1.

After each client's first session, his therapist completed the Client Problem Scale. Using the 7-point scales, the therapist rated the severity of the client's problems in the 10 areas in which the client had rated his own problems. After each client's last session or his last session before the end of the study, the therapist again completed the Client Problem Scale to rate the client's problem.

A client's responses to the Client Assessment Questionnaires generated two scores. The client's perceived disturbance score which was obtained by summing the client's ratings of the severity of his problems for the 10 areas and the judges' perceived disturbance score obtained by submitting the client's description of his specific behaviors or problems in the 10 areas to two clinical psychologists who did not know the client. Each psychologist who served as a judge had a minimum of 6 years of postdoctoral experience in diagnostics and therapy. The psychologists then were asked to rate each of the problems described for each of the 10 areas in terms of "how debilitating this kind of problem generally is for people." The judges worked independently and used 5–point scales with end points labeled "should not interfere with normal functioning ... should not ordinarily cause any psychological discomfort" and "results in severe interference with normal functioning ... may cause severe psychological discomfort." The scores given to a client by each judge were summed over all of the problems. In deriving the judges' perceived disturbance scores only the clients' descriptions of their problems (i.e., the second part of each question) and not the clients' ratings of the severity of their problems were given to the judges and therefore the judges' ratings were independent of the clients' ratings. They were dependent upon the clients' verbal reports just as the therapists' ratings were dependent upon what the clients told them in therapy.

The therapists' responses on each of the client problem scales were used to generate a therapists' perceived disturbance score. This was obtained by summing the therapist's ratings of the severity of the client's problems in each of the 10 areas.

Relationships between Clients', Judges', and Therapists' Evaluations of Changes during Therapy

The findings of most interest are those that reflect the degree to which the evaluations made by clients concerning the progress of therapy correspond to the evaluations made by the therapists and judges. The correlation between the clients' perceived disturbance change scores and the therapists' perceived disturbance change scores was only .10. This correlation indicates that the clients and therapists did not agree concerning the progress made in therapy. In contrast, however, the correlation between the clients' perceived disturbance and the judges' perceived disturbance change scores was .54 and, more importantly, significantly higher than the correlation between the change scores for clients and therapists.

The therapists' inaccuracy in judging therapy progress may have stemmed from a general inability to accurately evaluate clients. If this were the case, it would not be expected that therapists' evaluations of the clients would be correlated with the clients' perceptions before or after

therapy. In fact, however, the correlation between the therapists' and clients' ratings of disturbance before therapy was .34 and after therapy was .30. These correlations were not statistically different from those between judges' and clients' ratings of disturbance before therapy or after therapy. Although the therapists were somewhat less accurate than the judges in evaluating the clients, this discrepancy cannot account for all of the error in the error in the therapists' judgments of change.

Another possible explanation for the therapists' inaccuracy in judging therapy progress is that the therapists' high motivation to see the clients improve may have caused the therapists to overevaluate the effects of their therapy. On the basis of this speculation, it would be predicted that the therapists saw greater improvement in the clients than did the judges or clients. Consistent with this expectation, comparisons of the pre- and post-therapy scores of the therapists revealed a highly significant improvement. Both the therapists' generally lower accuracy in evaluating clients at a given time and the therapists' tendency to overrate the progress in therapy contributed to their lack of agreement with clients and judges concerning the progress in therapy.

This investigation provides another example of the often noted disagreement between clients and their therapists. It also provides data concerning the causes of the disagreements between clients and therapists over the progress of therapy. Of most importance, this investigation revealed that although they differed from those of the therapists, the clients' evaluations of therapy progress were consistent with those of independent judges, thereby suggesting that contrary to the usual assumption, clients may be good (or at least better than their therapists) at evaluating their progress.

In view of the growing concern over the rights of consumers, it may be that the problem of client-therapist disagreements over the progress of therapy is a moot issue. When working with self-referred clients, it might be asked whether the therapists' opinions should be used in evaluating the progress of therapy. The client knows (possibly better than he can articulate for the therapist) why he came to therapy and therefore is in the best position to determine whether the reason for his coming still exists. If the client believes that the reason for which he came to therapy no longer exists or has been substantially reduced, therapy has been successful. If he believes the reason still exists, therapy has not been successful. In cases of disagreement in which the therapist perceived more progress than the client, one might question the therapist's sensitivity before contradicting the client's report of his own suffering.

In cases where the client reports greater progress than the therapist, the therapist may have identified other problems in addition to the client's target problem. However, since the client is not attending to these other problems, their resolution is the goal of the therapist, not the client, and it would be inappropriate for the therapist to allow the achievement or lack of achievement of these goals to influence the evaluation of the therapeutic progress.

Condensed with permission from the *Journal of Counseling Psychology*, 20(2):149–153, 1973. Copyright 1973 by the American Psychological Association, Inc. Reprints of original article from David S. Holmes, Ph.D., Department of Psychology, University of Kansas, Lawrence, Kans. 66044

Reactions of Samoan Burn Patients and Families to Severe Burns

Joan Ablon

Studies of severely burned patients emphasize the serious and complicated emotional reactions that accompany such injury. Psychiatrists may be called into such cases because emotional problems are sufficiently severe as to hinder or inhibit treatment of burn injuries. For this reason clinicians suggest that consideration of burn-associated emotional disturbances must be involved in the treatment plan.

The data presented here are based on materials gathered from interviews with 18 families that fire touched by death or injury, and with Red Cross officials, physicians, nurses, and attorneys who were associated with the fire victims over the following days and years. Seven persons in these 18 family units died from burn injuries, and 21 others were hospitalized. Although entire families were interviewed when possible, one person in each family acted as chief informant. The followup research was carried out 5 years after the fire. Therefore the categories chosen for examination were limited to those which I realistically could expect to elicit in significant detail and with some degree of accuracy. Although Samoans rarely talk about the fire spontaneously, their memories of it and of subsequent events are keen and detailed. Medical personnel were eager to talk about their experiences and retained clear memories of the event.

The fire occurred in a church hall on May 23, 1964. The 250 persons attending represented almost every Samoan church and extended family group of the Samoan community. The Samoan population of the city was estimated to be about 4000 persons at that time. The audience was trapped when a blaze was ignited in a container of gasoline brought by a performer for use in his fire dance. Water was thrown on the flaming gasoline, and the fire leaped up to the curtains and rafters. Although there were several exits, almost everyone made for the front door which was partially blocked, and writhing bodies piled up at this entrance. Those who emerged from the burning building were helped by relatives or other Samoans into cars and taken to the closest hopitals—the emergency ward of the county hospital and a nearby private hospital. When police cars and ambulances arrived, the more severely burned were piled into these. Fire fighting equipment was dispersed to the scene and the fire was rapidly extinguished. Six persons died that night, and 11 others died in the following few weeks.

Medical Personnel Report Samoan Response

The surgeon in charge of the emergency room at one of the receiving hospitals recounted the experiences vividly. As he entered the building, he was puzzled by the quiet and order. Only when he entered the second floor ward that had been set aside for the victims could he believe the disaster had occurred. He found there 40 badly burned persons and dozens of relatives. What struck him most was the silence. The only sounds from patients were comments of gratitude for any small attention.

He was the only senior physician to work with the interns and residents, but other hospital staff joined him. He

appointed a resident to call other hospitals to inquire how many patients each could take while he examined the patients to assess the severity of their burns. He set up four teams to perform the eight tracheotomies that were necessary. He then transferred 32 of the 40 patients to five other hospitals, sending a high proportion to a teaching hospital that he knew was equipped to handle burn injuries. He emphasized that the procedures of treatment and transferral were expedited by the cooperation of the patients and families. He felt that the deportment of patients and relatives greatly reduced the number of casualties.

This surgeon stated that he had never before seen so many acutely burned patients at one time. He remarked on the "stoicism" of the victims and their families. When informing persons of the death of relatives he was struck by the unemotional acceptance. He stated that he had no occasion to give medication for shock or grief—"not even an aspirin."

A disaster official called the Samoans the "most stoical group" he had seen in a long career of disaster work. He stated that in sudden crisis situations, Americans typically become belligerent and hostile, looking for someone or something to blame for their loss. Yet here there was little weeping and no "blame," just quiet waiting by anxious relatives.

One psysician reported on his experiences the following morning when he came to the hospital where there were many Samoan patients. He found a large group of relatives. He spoke with a Samoan minister and told him it would be better if the assembled group left. The minister asked the group to do so and they left quietly. The physician said in his experience this was "amazing." The group was quiet and manageable, "like no other ethnic group I could think of."

While a few persons were treated briefly in emergency rooms, most faced weeks or months of hospitalization. Physicians who treated Samoans for long-term care likewise remarked on the manner in which patients and their families withstood injury and pain. Patients were described as stalwart and uncomplaining, no matter the seriousness of their burns. In this regard Samoans were considered model patients. One plastic surgeon, however, remarked that he encountered problems in patient management because most patients did not follow directions once they left the hospital. Some would not return for followup visits. This doctor felt that while he had adequately explained the procedures the patients did not see the importance of carrying through the orders. This aspect of treatment proved difficult and frustrating.

The Samoan View

My interviews did not focus on pain or the pain experience. While there is no doubt that the Samoan patients experienced deep pain, their outward response was "stoical" with little show of emotion typical of American patients. In the course of my interviews, the subject of pain was spontaneously mentioned by only three respondents. Two of them brought up the subject in explaining their refusal of skin grafts which would have improved their scars. These two related that other Samoans who underwent grafts told them the operations were the most painful aspect and for this reason these two chose to forego the operations. On the other hand, the two persons who were most severely burned and who underwent skin graft did not bring up the subject of pain. They both displayed the successful results

and lauded their surgeons.

There were relatively few complaints about medical care. Most persons felt they had received excellent care through the total treatment. Almost all who lost family members stated that they felt these persons had received the best care, but that they were too badly burned to survive.

Distress as Expressed by Samoan Informants

Medical and agency personnel commented on the extraordinary manner in which Samoan victims and their families absorbed the disaster and its effect. The caregiving services provided by the traditional Samoan large extended family met many urgent needs of finances, child care, and household management. Most respondents were parents with dependent children. Much of the distress was caused by the disruption of the household. Yet, the extended family immediately rallied for its members. The uninjured and those who were able to be up and around worried about juggling time for work, and for the care of children and those still recuperating, rather than focusing on the state of their own or others' injuries, or even of a death in the family.

Much distress was mentioned in cases where family members were listed as critical for days or weeks following the fire. One woman recalled her anguish in living with the fact that her husband and daughter were critically burned. For 2 weeks she did not know whether either one would live. She did not feel her daughter was receiving proper night care, and because she, like most Samoan women, is a nurse's aide, was allowed to sit with the girl during the night. She and her husband talked about this period, shaking their heads as they relived it. After her husband improved she would come each evening to his room to bring him Samoan food she had cooked after work. Exhausted, she would doze as he ate. Then she would go to the hospital across town where her daughter lay critically ill, and spend the night at her side. At 6:30 a.m. she would report for work. This woman was assisted by her mother in caring for her other seven children. Samoan friends who also were nurse's aides would occasionally sit with her daughter to relieve her of that much of her burden.

Two women who lost family members spoke of "nervous" symptoms that followed the deaths. One widow reported that after her own recuperation she was "nervous" and ate all the time and, as a result, got "fat." She also said that for the first time in her life she angered easily. These patterns have recurred in times of lesser stress. The second was hospitalized with a psychotic depression some 18 months after her son's death in the fire. This informant was the only person who received psychiatric treatment.

Among the 18 families, there were four women who were widowed by the fire and three couples who lost a child. The widows all expessed their initial shock and grief, but quickly followed this with a recitation of the practical and emotional support they were given by their own and/or spouse's relatives. The extended family with its system of support and expectations of rapid resumption of routine household responsibilities served as a strong force for stabilization of the bereaved.

Three of the four widows have since remarried and all appear to have made a successful rehabilitation. The most acute grief reactions were found on the part of two of the three mothers who lost children. These two women have continued to visit the graves of their children and act out

their grief in modes considered deviant by other Samoans. Many Samoans have told me that Samoans "do not have such things." However, it must be emphasized here that such symptoms as Samoan survivors might have exhibited at the time are nearly impossible to assess 5 years following the critical event.

Continuing fears and dreams were reported by about half of the respondents. Three reported that they have dreams involving burning buildings. Seven persons reported fears related to fire, crowds, or sudden accidents. Six stated they are wary of attending public gatherings, and four stated that if they attend a Samoan affair where there is a fire dance they will leave. My observations at a public event confirmed the fact that several families left the hall when a fire dance began, but returned after its completion. Several persons who expressed anxieties about attending public gatherings stated that they investigate all exits. A few persons stated that they frequently think about the fire, although three couples stated that they never think about it. Two of these couples were among those who suffered the greatest injuries. Samoans rarely speak of the event among themselves, preferring to leave it in the past.

Response to Lasting Scarification

The anguish involved in physical disfigurement and scarification appears to be less serious than might be expected, given the high visibility of the scars that most victims bear. Samoans typically are of husky build and take great pride in their size and strength. Nonetheless, statements by respondents suggest that scarification and loss of strength or physical abilities engendered relatively little distress. Only eight persons out of 15 who were burned remarked on slight continuing pain or physical discomforts. Only six persons, four women and two men, all among those most severely burned, brought up the issue of scarification and appearance. Their concerns were expressed in a variety of ways.

One handsome young man who was in his early twenties at the time of the fire stated his concerns the most candidly: "I look at my hands, and for a long time I was ashamed. My hands are all scarred. I look at those hands and I think, my hands used to look like that, and now they look like this. I used to be ashamed, but now people know me, and my friends know that's just me and a part of me like this. I still do feel self-conscious about being with crowds and going places where there are strange people because I think that they'll look at my hands, and think that's a freak with hands like that."

In contrast were the statements of a young woman who was among the most severely burned. She was in her late teens at the time of the fire and very beautiful. She underwent 3 years of skin grafts. Facial surgery allowed her to reappear as an attractive young woman, but her hands and arms remain badly scarred. She recounted how her nurse forced her to look into a mirror and see her face for the first time after the fire. She screamed, but came to realize that she must live with the reality. Even the nurses dreaded to look at her. "At first I couldn't move my hands. I couldn't do anything. My physical therapy had to do with simple things. I had a television and sometimes as I watched TV I had a rubber ball that I would try to squeeze. They had a special knife and fork and when I would eat, the therapist would come and help me. This woman was wonderful. I remember the first time I tried to cut an egg. When I look back

on this now, an egg is the softest thing to cut with a fork, but I couldn't do it. I tried and I practiced and I practiced until I was able to do all those things. My handwriting was like a child's. It was terrible. I just kept working on it. I learned how to type from scratch, but it took a long time. Now the doctors where I work say it is miraculous. They look at my hands and ask 'Who did the surgery?' I had a fabulous surgeon that has done all this work during the years. When I tell him this, he says he can do only 10 percent. The patient has to do 90 percent. He says it is my energy. Now I type and take shorthand."

She mentioned that a friend asked her why she is not self-conscious about the scars. "I feel that I wasn't born with these scars. It wasn't my fault they are there, but they are there and I can't let it just change my whole life. Sometimes new (non-Samoan) friends ask me about the scars, but Samoans never talk about the fire."

One young woman who was widowed remarked on her shame at her appearance: "I thought I would never marry again. I was all scarred. I thought how could I get married?" (This woman in fact remarried 14 months after the fire.)

An older woman whose arms and hands are badly scarred brought up the issue of scarification as a matter of concern to her children. "I guess I worry the most for my children—that their mother should have to be this scarred. I've wondered if my children should have to go through life feeling ashamed. To me it wasn't so bad because I was older, but for my girls, I think it is sad that they should have to go through life with those scars. Once my son came home and he said, 'I almost slapped a girl today because she asked,' 'Why are your mother's hands so ugly like that?' "

A plastic surgeon who treated many Samoan burn victims remarked on the absence of distress. He stated that almost invariably other patients with such injuries undergo marked depression and anxiety. He is asked by patients such questions as "What will I look like? Will I be a monster?" Not one of his 15 Samoan patients asked such a question during the treatment. No depression was observed, and no medication for psychological problems was dispensed. He was overwhelmed by what he called "the flat affect" of his Samoan patients.

Several factors appear to have contributed to the lack of anguish over cosmetic considerations. Samoans move largely in a Samoan social world. The fire was a significant event in the Samoan community. The details of the fire and the personal injuries inflicted by it are well-known, and are now ignored. Also, the pragmatic attitudes of Samoans toward harsh and "unpleasant" realities of life contrast with the romantic nature of cosmetic preparations regarding physical beauty as defined by American society; thus the Samoan attitudes deemphasize the importance of physical scarification.

Contrast with Reported Responses of American Burn Patients

The literature is replete with accounts of emotional problems associated with severe burn injury.

In the assessment of reaction to fire stress and associated grief, materials for comparison were sought for the Cocoanut Grove fire, which occurred in a Boston night club in 1942 and resulted in the death of 492 persons and the injury of some 142 others. Staff at Massachusetts General Hospital published papers that chronicled the hospital's receiving of victims and the condition and care of the 39 patients

who survived the first night. Initial contact with the 39 Cocoanut Grove patients revealed that few except the comatose lay quietly at rest. The outstanding characteristic of the living group was hyperactivity. This hyperactivity was attributed to three major causes: pain resulting from burns, mucous irritations by irritant gas, and physical injuries resulting from the panic of the scene; fear and hysteria, as a result of the traumatic experience and panic of those with and without physical injuries (alcohol consumed previous to the fire also contributed); and anoxia, which may give rise to excitement, loss of self-control, or even manic behavior.

The physicians involved in treating Samoan burn patients described a *lack* of hyperactivity of the victims as they awaited treatment. It might appear that some of the alternative precipitants of hyperactivity, such as pain, fear, and hysteria, might less likely have been present in the cases of Samoans because of their high tolerance for pain. Doctors speak of their "stoicism" and "flat affect." The psychological set of the Samoan may have precluded the psychologically induced physical reactions described for Cocoanut Grove victims.

A review of the social service activities at the time of the Cocoanut Grove fire noted that the personal and social aspects of the patients' problems were acute and distressing. Because the fire at the Samoan dance occurred in a relaxed and joyous context similar to that of the Cocoanut Grove fire, a similar stage was set for ensuing deep emotional distress. Of the 39 Cocoanut Grove patients admitted, seven died within the first 62 hours. Of the 32 in the patient population, most were included in the reported screening and followup activities that covered psychotic problems, psychoneurotic problems, and problems that later developed because of bereavement. At least 14 patients presented neuropsychiatric problems, but this was well within the experience of psychiatrists in general hospitals where they estimate 45–55 percent of the patient population presents psychologic factors in its problems. In all patients, with clear-cut neuroses and psychoses, such problems were suggested by their histories. Severe emotional disturbances, where no indicators appeared in histories, seemed attributable not so much to the impersonal trauma of the fire as to problems in personal and social relationships involving conflict and guilt.

There was a common syndrome of somatic and psychologic symptoms experienced by bereaved patients; the work of grief with its disabling disturbances could be delayed, but not avoided.

While no systematic psychiatric evaluations were made of the Samoan patients, statements of medical personnel involved with care of these patients present a marked contrast with the findings on the Cocoanut Grove patients. Although it could not be denied that the patients experienced pain and distress, these physicians did not detect emotional problems during the treatment period that they would label as psychiatric complications.

Cultural and Religious Factors

Samoans as individuals and as family groups appeared to have absorbed the disaster amazingly well. Many informants say off-handedly that despite painful events of whatever magnitude, the mechanics of life must, after all, go on.

Samoans were queried as to their own explanations for their unusual strength in handling the stresses of the fire. Repeatedly they referred to the

Samoan proclivity for hard work and their deep religious beliefs. Samoans expect to have to work hard in life. They know they must get over difficulties that are normal expectations of life.

Secondly, informants frequently stated that people bore up under their losses because Samoans are very religious, go to church, and have faith. Samoan Christian churches, which mushroomed with the influx of Samoans migrating to the mainland cities, serve as the social as well as the religious centers of the Samoan population in all of the West Coast cities. Samoans are zealous churchgoers, and household prayer and Bible reading are routine for most families.

Samoan clergymen ministered faithfully to patients. The choirs of most of the 10 Samoan church groups made regular Sunday afternoon rounds to all the hospitals to sing hymns and pray over Samoan patients. This was greeted with amazement and respect by hospital staff and non-Samoan patients.

Some fire victims spoke of being consoled by the fatalism of "God's will" being worked out in the disaster. This was the message of the ministers and priests who came to them. Indeed, at the time of the death of a Samoan, religion is the chief consolation for survivors. In the very act of withstanding the sacrifice of their loved ones, Samoans frequently feel they are able to show their dedication to God and Jesus. The continual reaffirmation of their faith allows some survivors to speak of the time of death as their happiest hour of sacrifice accompanied by understanding and blessing.

One plastic surgeon who attended the largest number of fire victims commented on the power of this religious fatalism for his patients. He felt they accepted whatever happened and phrased this acceptance in such statements as "What is fate is fate," and "Whatever God wills." He gave the example of informing a husband of the death of his wife. He, in turn, passed on this word to relatives waiting outside. They fell to their knees in prayer, and then left without demonstrating external signs of grief.

A third factor contributing to the Samoan response is the bulwark of available family and community support. This element may be more apparent to the non-Samoan observer than to the Samoan who takes for granted the extraordinary emotional, social, and financial support offered by the Samoan extended family and the larger Samoan community. Medical and agency personnel never fail to remark with wonder on the spontaneity and extent of this support. Members of the large Samoan extended families moved in to aid fire victims with household management, funeral arrangements, and long-term nursing care.

These data suggest that the total Samoan support system may in effect preclude many of the emotional problems that are observed routinely in association with severely injured and bereaved burn patients.

Condensed with permission from *Social Science and Medicine*, 7(3):167–178, 1973.
Copyright 1973 by Pergamon Press Ltd.
Reprints of original article from Joan Ablon, Ph.D., Anthropology Consultant for the Community Mental Health Training Program, Universi y of California Medical Center, 1409 Fourth Avenue, San Francisco, Calif. 94122

Sex Differences in Perceptual Differentiation and Stimulus Intensity Control

Julian Silverman, Monte Buchsbaum, and Helm Stierlin

This study is concerned with sex differences on two perceptual response dimensions: perceptual differentiation and stimulus intensity control. The experiments used personality moderator variable analyses to clarify complex sensory-perceptual response-sex difference relationships: Both performance and electroencephalographic-(EEG) averaged evoked response measures of perceptual behavior are employed.

Experiment I

Subjects—Fifteen male and 15 female college students, ranging in age from 18 to 22, were selected for the study from the normal-volunteer programs at the National Institute of Mental Health. None of the subjects had a history of neurological or visual defects.

RFT—The Rod and Frame Test apparatus consists of a luminous rod frame and a chair from which the subject could view the rod and frame. Seated in front of the apparatus in an otherwise totally darkened room, the subject was required to adjust the rod so that it was vertical. Adjustable metal slats, with padding on either side of a headrest, secured the subject's head in the vertical position. A total of eight trials were administered. On half of the trials (Trials 1,3,5,7), the rod and frame were tilted in the same direction. On the other half of the trials, the rod and frame were tilted in opposite directions relative to the vertical position. An accuracy score was computed in terms of the average degrees of deviation from the vertical.

EEG averaged evoked response procedure (perceptual differentiation)—The stimuli used in this procedure were a series of tilted-line segments or rods which were presented as light blue lines on the black background of a computer cathode ray tube display. The line segments, 6 centimeters long, appeared in one of four positions of tilt to the right of vertical: 0, 6, 19, and 30 degrees. The center of the line segments always appeared at the same position on the display screen.

For each of the 4 degrees of tilt, the rod stimuli were presented in random order, 1 second apart, with a duration of about 50 milliseconds. The procedure was comprised of 512 stimulus presentations (128 per position of tilt). The cathode ray tube intensity was adjusted so that only the line segment was visible. The testing was conducted in a completely darkened room, and stimulus presentation was entirely silent.

Prior to stimulus presentation, the subject was seated in front of the display screen with his head in a headrest which reduced head-tilting motion. After the EEG electrodes were attached to the subject's head, he was shown his EEG on the cathode ray tube screen (on line) and was instructed how to minimize movement artifacts. The subject was then told that he would view a long series of line segments and that his task was simply to judge whether or not each line was vertical with respect to the walls of the room. He was asked not to make any vocal or motor response. The EEG data were obtained from bipolar recordings with active right occipital and the ipsilateral earlobe as reference.

Eight evoked responses were com-

puted, two averaged evoked responses for each degree of tilt. The pair of averaged evoked responses for each of the four positions of tilt represent "replicate evoked responses." The individual sweeps for each replicate averaged evoked response were assigned in a predetermined random order. The amount of difference in evoked waveform for the four positions of rod tilt was determined by using a discrimination index technique. The replicate technique was used to control for stimulus order and habituation and fatigue effects, and to establish a measure of averaged evoked response reliability. Thus, greater correspondence or similarity in averaged evoked response waveforms would be expected within replicate pairs than between replicates for the different treatments. The measure of replicate similarity used was the product-moment correlation coefficient computed between averaged evoked response ordinates.

Personality questionnaires — The procedures used were selected on the basis of earlier studies indicating (*a*) relationships between perceptual-response differences and response differences on anxiety questionnaires and on masculinity-femininity questionnaires and (*b*) prototypic sex differences in response to emotional stimuli.

Facilitation-Inhibition Scale—This 44-item scale has been found to distinguish between individuals who are differentially responsive to emotional stimuli. High scores on the Facilitation-Inhibition Scale may be considered as indicative of minimal receptivity to emotionally disturbing experiences; subjects with high scores are designated as inhibitors.

Welsh Anxiety Index—This scale is significantly negatively correlated with the Facilitation-Inhibition Scale. Whereas the Facilitation-Inhibition Scale may be conceived of as a measure of degree of openness to anxiety or defensiveness against anxiety, the Welsh scale was designed specifically to measure degree of anxiety. High scores on the Welsh scale may be considered as indications of high anxiety.

Masculinity-Femininity Scale—This scale was included in an attempt to measure the moderating effects of the masculinity-femininity variable on sex differences in perceptual differentiation. Individuals who present high scores on this scale are considered to be high in feminine interest.

The A-B Psychotherapist Scale—Among both male psychotherapists and male college students, higher A-B scale scores tend to be associated with higher RFT-error scores. Psychotherapists with extremely high scores ("A" therapists) have been found to be more successful in working with schizophrenic patients than psychotherapists with extremely low scores ("B" therapists). Perceptual characteristics of the A-type therapist make him more accepting of the "realness" of the schizophrenic patient's perceived unreality, his "spread of meaning," his depersonalization experience, and his awe and terror. Overall, the perceptual responses of the A-type therapist are more similar to those of the schizophrenic patient than are those of the B-type therapist.

Hypotheses — Significant correlations were hypothesized between scores on the various personality scales and scores on the RFT and 0–6-degree index evoked response measure:

- For both males and females, Masculinity-Femininity scores (high masculinity-femininity, high femininity) should be positively correlated with error scores on the RFT and negatively correlated with degree of perceptual differentiation as inferred from the 0–6-degree index evoked re-

sponse measure.

- Among males, A-B scores (high scores are prototypic of A therapists) should be positively correlated with RFT error scores and negatively correlated with 0–6-degree index values.
- Among males, anxiety scores should be positively correlated with RFT error scores and negatively correlated with 0–6-degree index values. Among females, anxiety scores should be negatively correlated with RFT scores and positively correlated with 0–6-degree index values.
- Among males, facilitation-inhibition scores should be negatively correlated with RFT error scores and positively correlated with 0–6-degree index evoked response values. Among females, facilitation-inhibition scores should be positively correlated with RFT error scores and negatively correlated with 0–6-degree index evoked response values.

Results—The RFT score and the evoked-response discrimination measure for each subject were significantly correlated, correlations between the two sets of measures were — .50 for females and — .47 for males. Males had significantly lower RFT error scores than females. Males had higher averaged evoked response indexes than females, but the difference was not statistically significant.

The correlation between the 0–6-degree averaged evoked response index and the MMPI Masculinity-Femininity Scale was — .36; the correlation of the RFT with the Masculinity-Femininity Scale was .22. Both correlations were in the predicted direction for the group data.

A significant tendency was found for male subjects who scored as A psychotherapists on the A-B scale to score lower on the evoked response perceptual differentiation measure. For females the correlation between the A-B scale and the averaged evoked response measure was minimal. Impressive sex differences were found in emotionality trait-averaged evoked response correlations: Female subjects who scored high on the Welsh Anxiety Scale had averaged evoked response scores indicative of high perceptual differentiation; for male subjects, high scorers tended to have low perceptual differentiation averaged evoked responses. The difference between correlations was statistically significant. With the Facilitation-Inhibition Scale males' and females' facilitation-inhibition scores were significantly correlated with averaged evoked response values in opposite directons. Thus, males, whose high facilitation-inhibition scores were indicative of minimal reactivity to emotional stimuli, tend to have higher perceptual differentiation averaged evoked responses. Among females, high facilitation-inhibition scores were associated with lower perceptual differentiation averaged evoked response values.

Intercorrelations between the questionnaire measures yielded additional interesting findings. For males, highly significant correlations between the A-B, Facilitation-Inhibitions, and Masculinity-Femininity Scales were found. This pattern is in accord with previous interpretations of the A-B therapist literature.

Experiment II

In the second experiment, the moderator variable approach was tested again in a study of normals and disturbed adolescent individuals. It was anticipated that the ranges of deviant responses in the latter groups for perceptual and personality measures would be larger in comparison with those in Experiment I. In the first study, inferences regarding maladjustment were derived from normal sub-

jects' responses to personality questionnaires; data for the present study were derived from clinically judged distinctions between normal individuals and individuals with adjustment problems who had been psychiatrically referred.

Subjects—Perceptual behaviors were studied in eight male and eight female patients (ages 14–17) with adolescent behavior disorders, their 15 male or female siblings (ages 13–20), and the previously mentioned 30 normal volunteers.

The disturbed adolescent patients (index cases) had been admitted to a research and treatment program at the National Institute of Mental Health designed to study various aspects of the separation process during adolescence. Their families were expected to participate in the program, and they also were asked to take part in various research procedures. Index adolescents and their families participated in a therapy program of no less than 3 months. It was usually only the siblings closest to the index age who participated in the program.

The index patients were all referred to treatment because they were underachievers and had major school problems. Most had run away from home repeatedly, many had become involved with drugs, and several had become seriously entangled with the law. None was clearly psychotic, although some were considered borderline cases.

Comparisons were made between the perceptual performances of the disturbed adolescents, the normal volunteers studied in Experiment I, and the siblings of the index patients.

Procedure—The perceptual procedures employed were the RFT and an averaged evoked response measure of stimulus intensity control.

Stimulus intensity control averaged evoked response procedures—Four intensities of light flashes were presented in randomized blocks of 10 of the same intensity: Each intensity was presented 120 times, making a total of 480 stimuli. EEG was recorded between vertex and left ear, with right ear ground. Averaged evoked response amplitudes were measured from a positive peak at approximately 100 milliseconds to a negative peak at approximately 170 milliseconds. A measure of the rate of increase of averaged evoked response amplitude with stimulus intensity was obtained by fitting a straight line to the averaged evoked response amplitude measurements obtained at the four intensities using a least-squares technique. The slope of the line thus indicated the relative rate of averaged evoked response amplitude increase (or decrease) with increasing light intensity.

Hypotheses—In this study the following predictions were made:

1. For patients on the RFT, there will be a reversal of the sex difference commonly found among control subjects. Male patients will evidence higher RFT error scores than female patients.

2. For patients on the four-intensity averaged evoked response procedure, there will be a reversal of the sex difference reported among control subjects. Male patients will evidence steeper augmenter slopes than female patients.

Results—Male siblings of index patients in this study had significantly lower RFT error scores than their normal female siblings. In contrast, among index patients, males tended to evidence, although not significantly, higher RFT error scores than females. The RFT scores of the normal collge student volunteers were not significantly different from those of the siblings of the index patients. A two-

way analysis of variance comparing the normal group with the patients showed a significant Diagnostic Group × Sex Interaction.

Averaged Evoked Response Amplitude-Intensity Slopes—For index patients, the averaged evoked response slope measure indicated a reversal of the previously observed normal male-reducer-female-augmenter pattern. Normal males evidenced significantly lower averaged evoked response slopes than normal females, whereas index males evidenced significantly higher averaged evoked response slopes than either index females or normal males. A two-way analysis of variance again demonstrated a significant Diagnostic Group × Sex Interaction.

Discussion

In other investigations of sensory and perceptual behavior, we have recorded systematic relationships between averaged evoked response characteristics and several different perceptual responses—stimulus sensitivity and stimulus intensity control, time error or contrast effect, perceptual variability, and perceptual differentiation. The findings in the present study indicate the significance of such studies for personality research. On two response dimensions, stimulus intensity control and perceptual differentiation, the relationship between sex and perceptual responsiveness was moderated significantly by nonperceptual characteristics. In general, on personality and clinical indexes of adjustment, maladjusted individuals evidenced sensory-perceptual responses prototypic of the opposite sex. In Experiment I, all of the personality trait—EEG perceptual-differentiation correlations that were statistically significant were in the predicted directions. Significant correlations were not found between the personality trait measures and the RFT measure of perceptual differentiation. In Experiment II, a significant reversal of sex difference was found for RFT performance for disturbed adolescent patients. A comparable reversal of the relationship between sex and the stimulus-intensity control EEG measure also was found in disturbed adolescent patients.

A recent study of college-age students and "hippies" further supports the main finding of concern here: When sex-difference-perceptual-response relationships are found on measures of perceptual differentiation and stimulus intensity control, they are moderated by personality traits associated with maladjustment.

The implications of this set of findings for research in perception and personality appear to be far-reaching. Evoked response perceptual techniques, which make minimal performance demands on subjects, are especially well-suited for longitudinal studies, in studies of psychotic states, drugged states, and in other altered states of consciousness. The importance of the complex relationships among sex differences in neurophysiological functioning, perceptual styles, and personality structure have just recently begun to be recognized.

Condensed with permission from the *Journal of Personality and Social Psychology*, 25(3):309–318, 1973. Copyright 1973 by the American Psychological Association, Inc. Reprints of original article from Monte S. Buchsbaum, M.D., Laboratory of Psychology, National Institute of Mental Health, Bethesda, Md. 20014

Niacin in the Long-Term Treatment of Schizophrenia

J. Richard Wittenborn, Emile S. P. Weber, and Mary Brown

The potential value of niacin as an aid in the treatment of schizophrenic patients has received attention, but accounts of attempts to exhibit a therapeutic advantage for niacin relative to placebo are generally discouraging.

This study was undertaken to examine the value of niacin as a supplement to treatment that the patient would ordinarily receive. Since a clinically desirable change might occur in any one of several forms, diverse criteria were included, and the study was planned to provide a sample large enough to establish the statistical significance of any clinically significant treatment-related changes. A 24-month-treatment regimen was undertaken to explore the cumulative effect of supplementary niacin.

The Sample

Most of the sample was drawn from the Male Admission Ward of the New Jersey State Hospital at Marlboro. A few patients had been hospitalized but were seen on an outpatient basis at the time the treatment was assigned. Patients who were beyond 65 years of age, in questionable health, or suffering from diabetes, liver pathology, or a neurological disorder, were excluded, as were mental defectives, alcoholics, transients, or certain patients with character disorders. Insofar as possible, neurotic patients or patients with unambiguous affective disorders were excluded as well.

The plan provided for 24 months of treatment with patients assigned to medication as they became available through hospital admissions. This report is based on a sample of 86 patients who were maintained with the project for a period of at least 18 months. Seventy-five continued in treatment for the scheduled 24-month period.

After several months of treatment, some patients in the experimental group developed a superficial hyperkeratosis, and were temporarily removed from treatment while dermatologic and precautionary measures were taken. In some cases more than a month elapsed before the full treatment program was resumed.

The presence of some patients for whom the diagnosis was questioned also created uncertainty. In the experimental group there were 14 patients for whom the diagnosis of schizophrenia was questionable, and in the control group there were eight such patients. Accordingly, a subsample was formed: patients for whom treatment had not been interrupted and for whom the diagnosis had never been questioned. This group comprised 42 patients, 22 in the experimental group and 20 in the control group. All analyses conducted for the total sample were replicated for this small subsample.

Since the development of symptoms brings the patient to treatment and their remission ordinarily precedes the conclusion of treatment, the symptomatic manifestations of the sample assume a central pertinence, and a comprehensive set of symptom-rating scales is a useful point of reference in documenting the representative symptomatic composition of a sample. A set of scales, such as the Wittenborn Psychiatric Rating Scale, offers a descriptive spectrum not provided by simple diagnostic classifications and may be used also as criteria of change from pretreatment to post-

treatment status. Standard scores for the Wittenborn Psychiatric Rating Scale factors show that the symptomatic qualities commonly ascribed to schizophrenic patients were well developed in the sample at the time treatment was undertaken.

General Procedure

The aim is to examine the efficacy of a regimen of 3,000 mg. of niacin daily when administered under double-blind conditions as a supplement to whatever psychotropic medication or other treatment might be recommended by the physician. To encourage uniformity, thioridazine was recommended as the primary neuroleptic medication, but the physician was not held to this.

The efficacy of 3,000 mg. of niacin was judged on a comparative basis by using a control sample of patients who received 6 mg. of niacin per day. Patients were assigned in double-blind manner to either the high-niacin or the control group in a 60 to 40 ratio. All patients initially received 500 mg. of niacin per day. Consequently, all who were susceptible to the flush that often accompanies large initial quantities of niacin could have this experience, and the double-blind conditions were thereby protected. The dosage was gradually increased for the patients receiving the megavitamin regimen and decreased for those receiving the control regimen. Each attained his assigned dosage level by the beginning of the second week.

The general procedures provided three functions. The most essential was to maintain the patient in treatment to a maximum of 24 months. The labile condition of the patients, combined with policies which tend to minimize inpatient care, meant that most patients left the hospital after relatively few weeks and treatment was continued on an outpatient basis. Because the sustained interest and cooperation of the patient, family, or associates were necessary, a social worker called at the patient's home at approximately monthly intervals. In this way, the interest of the family was maintained, and an independent assessment of the patient's progress and cooperation with the treatment regimen was made.

The second function was to provide assessments of the patients prior to treatment and at intervals during treatment. The assessments were designed to reflect three major areas: symptomatic developments observable by others, subjective discomfort as reported by the patient, and the quality of home and community adjustment as reported by the family or close associates. Major assessments were conducted every 6 months. In addition, each month the patient visited the outpatient clinic, where he was examined by the psychiatrist, interviewed by the nurse who collected samples necessary for laboratory tests, and tested and interviewed by the psychologist.

A third function was to protect the patient from any untoward effects. Therefore, a comprehensive battery of laboratory tests was conducted at least every 6 weeks, usually at the monthly visits to the outpatient clinic.

General Changes of Clinical Interest

The 75 patients who completed 24 months of treatment were a residuum of a sample of 140 patients whose treatment was not arbitrarily concluded by the termination of the project. Of this group, 60 percent continued in treatment through the first 12 months, and 54 percent continued in treatment throughout the 24-month period.

Because of the policy of encourag-

ing patients and their families to seek an outpatient adjustment, a substantial portion of patients leave the hospital only to return within a year or two. It therefore was anticipated that the incidence of rehospitalization would be sufficiently great in the control group to show contrast with the experimental group if, indeed, niacin were effective in improving the adjustment in the community and in reducing the incidence of recurrence. When the number of patients who were rehospitalized during treatment was examined, no difference between the treatment groups was found.

Most of the patients required major tranquilizers throughout the period of treatment, but this factor failed to discriminate between the treatment groups. However, in both the experimental and the control groups there was a diminution in the percentage of patients requiring tranquilizer treatment at the end of the successive years.

After the second month, both groups showed significant increments in body weight.

Symptoms and Self-Reports

Parallel analyses were made from the total sample of 86 patients and for the subsample of 42 patients. Since treatment was uninterrupted and the diagnosis of schizophrenia was not questioned in the subsample, the discussion of symptoms and self-reports will be limited to the findings for this subsample.

Ratings required by the Wittenborn Psychiatric Rating Scale were made independently by the psychiatrist, psychologist, and nurse. For each of the 72 scales, the three ratings were reconciled to generate a composite rating. The reconciled ratings were scored in the usual manner to generate 12 symptom-factor scores. On raw symptom-factor scores and on individual symptom-rating scales, a substantial diminution in level of pathology within treatment groups was noted over the course of treatment. For present purposes, however, comparisons between treatment groups are the primary interest.

When Wittenborn Psychiatric rating Scale raw factor scores based on ratings made before treatment and at 6, 12, 18, and 24 months of treatment are summarized for the selected subsample, only one of the comparisons meets the criterion for statistical significance. This is for the "manic state" factor score at 12 months and indicates that the control group was more manic than the experimental group at that assessment period. This could have occurred by chance, however, and does not alone provide an adequate basis for a conclusion.

The experimental and control groups were compared in terms of the 72 scales comprising the Wittenborn Psychiatric Ratings Scale, and these comparisons were conducted for both the subsample and the total sample at each assessment period. In the course of these comparisons, 13 of the scales provided a significant discrimination on at least one occasion. Twelve of the 52 comparisons based on ratings during treatment meet the criterion for statistical significance. Two of these significantly differentiating scales, "nosiness" (12th month) and "critical of others" (24th month), indicate the greater abnormality in the control group. The other 10 significant differences show the greater abnormality in the experimental group.

One assessment was made on the basis of the Rutgers Nurse's Rating Scale, comprising 25 items which were not primarily symptomatic in their significance. These items described qualities of behavior of concern to nurses,

and each was examined in the comparisons. All the differences at the 12th month are in a direction to indicate less desirable responses in the experimental group. Six are statistically significant. The differences at the 24th month are not marked or consistent.

Although the observable symptomatic aspects of mental illness are central to both our concept of mental illness and to practical implications, the discomfort which often accompanies psychic disorders cannot be disregarded. The Today's Mood Inventory, a self-report of tension, was included in the expectation that the responses it required would be within the competence of most patients and would elicit a report which could be used. Self-descriptive inventories are used at some risk with mental patients, particularly schizophrenics, because some patients may not provide a complete set of responses and because some patients tend to resort to a monotonously stereotyped, if not meaningless form of response.

The Today's Mood Inventory comprises 117 items descriptive of various aspects of tension. The patient marked each item as "true," "partly true," or "not true." Scrutiny of the responses at pretreatment testing, at the end of 1 year, and 2 years revealed that some patients did approach the inventory in a stereotyped manner. If a patient marked as many as 111 of the 117 statements as "not true," his response to the inventory was regarded as a stereotyped denial. The number of patients offering a stereotyped denial increased during the course of treatment, but the difference between the groups was not significant.

The responses of most patients were free from stereotypy, and for these individuals the inventory was scored to yield a measure of tension. The analyses of these scores suggest that the greater reduction in tension during the course of treatment occurred in the control group. Nevertheless, both residual score analyses and analyses of covariance failed to reveal a significant difference between the groups.

Home and Community Adjustment

The quality of the patient's adjustment outside the hospital and away from the clinic was examined on the basis of inventories used by the social worker to record observations and information gathered on home visits.

The effect of niacin may be examined from the standpoint of two questions for which home and community adjustment information are relevant. The home and community adjustment information may be used to examine the possibility that the continued high dosage of niacin results in some change in the patient's personality or that high dosage of niacin is associated with changes in the quality of home and community adjustment per se.

There are many relevant facets of personality and a variety of devices for assessing them. At the time of an acute disturbance, however, expressions of personality, and probably other expressions, are either distorted or obscured. Thus, a pretreatment assessment based on behavior at the time treatment is undertaken may be appropriate for gauging changes that are a part of remission, but such assessment does not provide an appropriate baseline for gauging changes in the personality. Therefore, personality change in the course of therapy must be examined on the basis of premorbid descriptions provided by family informants.

The information gathered by the social worker at the beginning of treatment refers to the informant's observations and impressions of the patient's personality prior to the episode,

and this information provided the baseline for observations and impressions at 12 and 24 months of treatment. The inventory forms included 46 items of information perceptible to family informants. These items were in standard format, and the relative incidence of "favorable" answers was examined for each item separately. There were 15 items for which the incidence of a "favorable" answer changed at least 12 percent and as much as 40 percent from the baseline to the end of treatment.

Both the experimental and the control groups showed changes which might be viewed as a natural social consequence of recent hospitalization. Relative to their premorbid state, fewer were supporting themselves, seeing their relatives frequently, or maintaining their friendships. Other changes that would suggest a somewhat more expressive and less suppressive, cautiously defensive posture were also found in both groups.

Some changes were apparent in the experimental group only. Most of these items suggested that after niacin treatment the experimental patients showed some diminution in their sense of responsibility. For example, after treatment more of the experimental group blamed others for their mistakes, and more of them displaced their anger. In addition, fewer denied their anger, and more of them procrastinated. The reports also indicated that fewer of the experimental patients took pride in their appearance, more were willing to throw things away, and fewer were devout. After treatment more experimental patients lacked confidence, and more complained of not feeling well.

The foregoing description of the trends in the social worker's data is based on the total sample. When the data for the subsample were examined, trends were diminished, but not reversed.

The quality of the home and community adjustment per se also was examined from the standpoint of differences between the treatment groups. For this purpose an inventory was used to elicit information from family informants at the time of the social worker's monthly visit to the patient's home. The items were designed to represent the problems of maintaining male schizophrenics in an outpatient situation and were based on the kinds of complaints and difficulties that were associated with the patient's admission to the hospital.

A factor analysis was made and four factors generated. The first factor, designated "a problem to the family," comprised such items as "a concern to the neighbors," "does not cooperate with household," "speech inappropriate," "is distressing or embarrassing to family." The second factor, designated "self-sufficient," represents such items as "participates in activities with others outside the home," "leaves the premises unescorted," "drives an automobile," "shops by himself." The third factor, "antisocial," includes "gets involved with police," "gets into bad company," "steals or pilfers." The fourth factor, "cooperates with treatment," includes "keeps appointments," "takes his tranquilizer," "has a positive attitude toward niacin."

Scores were computed for each home visit and analyzed for the total sample and the subsample. There was a general trend toward improvement in both groups, but very few were statistically significant. In most comparisons, however, the direction of difference between the groups suggests that the home and community adjustment had become more favorable in the control group than in the experimental group.

This account is limited to criteria for which analyses were first completed.

General improvement over 2 years was indicated by both clinical developments and changes in the assessments. In view of the attention and helpful reassuring support that the patients and their families received from the project staff, general improvement is not surprising. But, careful comparative analyses of the data revealed very little difference between the responses of the two groups and no definite indication of a therapeutic advantage for the supplemental use of niacin over the course of 2 years.

Although the expected indications of disturbed carbohydrate metabolism and gastroenteritis did not appear, a substantial portion of the sample developed a pigmented hyperkeratosis which in some cases bore a resemblance to acanthosis nigricans. Although this accompaniment of high-dosage niacin treatment had been described in the literature, it had not been described for psychiatric patients. Reasons for the prevalence of pigmentation in this sample are not known. This pigmentation tended to be limited to parts of the body covered by clothing and was most conspicuous in moist areas. It is possible that it is unreported by most mental hospital patients and therefore overlooked. According to some outpaitients, the accumulated darkened skin can be removed by vigorous scrubbing. The nature of the concomitant psychotropic medication was examined, and it was found that pigmentation occurred in patients who were receiving phenothiazines as well as in those who were not.

The possibility that pigmentation might be associated with some adverse response to treatment was explored by conducting analyses comparing the response of niacin-treated patients who were never pigmented with that of the control group. These analyses revealed no indication of therapeutic efficacy in patients who were receiving niacin and were free from pigmentation.

This assessment of niacin as a supplement in the treatment of schizophrenia was conducted with patients considered to be representative of those for whom niacin treatment could be recommended. The criteria were selected because of their practical clinical significance and face validity. The size and composition of the sample, combined with the diversity of the criteria, confer great pertinence on the present findings and are discouraging to the expectation that a general 2-year regimen of niacin supplementation will be an important aid in the treatment of schizophrenic patients who come to public hospitals.

Condensed with permission from the *Archives of General Psychiatry*, 28(3):307–315, 1973. Copyright 1973 by the American Medical Association. Reprints of original article from J. Richard Wittenborn, Ph.D., Interdisciplinary Research Center, Rutgers University, New Brunswick, N.J. 08903

recent nimh publications

Single copies of these publications may be obtained from the Public Inquiries Section, National Institute of Mental Health, Room 15C17, 5600 Fishers Lane, Rockville, Md. 20852. A complete list of all publications available from the NIMH may also be obtained from the Public Inquiries Section. If a price is given, the publication may be ordered in quantity from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. Enclose a check or money order payable to the Superintendent of Documents.

Bibliography on Ethnicity and Ethnic Groups. This 250-page book compiled by Richard Kolm explores the theory and the social, cultural, and psychological consequences of membership in a minority or immigrant ethnic group. Primary emphasis is on psychological adjustment and acculturation and patterns of identity, family life, and communication structure. Detailed subject index. DHEW Publication No. (HSM) 73–9009.

Bibliography: Epidemiology of Mental Disorders 1969-1970. This second issue with 1627 references helps identify and utilize research for understanding the primary and contributory causes of mental illness. Six classifications: design and implementation, etiology of mental disease, rates of disease, population characteristics, services and programs, and treatment outcome. Subject and author indexes. DHEW Publication No. (HSM) 73-9043. $2.10.

The British Narcotics System. NCDAI Report Series 13, No. 1. Deals with problems of administration and the changing character of narcotics addicts. Discusses the British belief that narcotic dependence is a medical problem.

Phencyclidine (PCP). NCDAI Report Series 14, No. 1. Analyzes this animal tranquilizer with its unusual range of effects and its intended medical usage as contrasted to street abuse patterns. Patterns of use and subjective, psychological, and physiological effects are examined. NCDAI Pub. No. 18.

Directory of Halfway Houses for the Mentally Ill and Alcoholics. Lists facilities serving the mentally ill, alcoholics, and Salvation Army residential facilities. Primary focus is on provision of room and board and assistance in daily living activities. Data includes name, address, telephone number, capacity, ages and sex served, maximum stay permitted, and admission requirements for each facility. DHEW Publication No. (HSM) 73–9008.

Subscription Form for the Mental Health Digest

To: Superintendent of Documents
Government Printing Office
Washington, D.C. 20402

Please enter my subscription to the Mental Health Digest.

$_____ is enclosed. (Check, money order, or Supt. Doc. coupons)

Please charge this order to my Deposit Account No. _____

Name _____
(please print or type)

Address _____

City, State, Zip _____

An annual subscription to the Mental Health Digest is $6.50. For foreign mailing, add $1.75. This additional fee is not required for Canada, Mexico, and Central and South American countries except for Argentina, Brazil, British Honduras, French Guiana, Guyana, and Surinam.

DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE
HEALTH SERVICES AND MENTAL HEALTH ADMINISTRATION
NATIONAL INSTITUTE OF MENTAL HEALTH
5600 FISHERS LANE
ROCKVILLE, MARYLAND 20852

OFFICIAL BUSINESS
Penalty for private use, $300

U.S.MAIL

POSTAGE AND FEES PAID
U.S. DEPARTMENT OF H.E.W.
HEW 396

MHD AUG-73
UNIVERSITY MICROFILMS
JOY REED, SUPVR PERIODICALS
300 N ZEEB RD
ANN ARBOR MI 48106

DHEW Publication No. (HSM) 73-9001
Printed 1973

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
Health Services and Mental Health Administration

National Institute of Mental Health